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ABSTRACT

Title of Dissertation: MOVING WITH THE MILITARY: RACE, CLASS,

AND GENDER DIFFERENCES IN THE

EMPLOYMENT CONSEQUENCES OF TIED

MIGRATION

Richard Thomas Cooney, Jr., Doctor of Philosophy, 2003

Dissertation directed by: Professor Mady Wechsler Segal
Department of Sociology

When a spouse must move to a new geographic location as a result of the

employment situation of his or her wife or husband, that spouse is often referred to as

a tied migrant or a trailing spouse. Previous research demonstrates negative

employment and earnings consequences for tied migrants, but little is known about

how the impact of such mobility differs by the gender, race, and class of the trailing

spouse. The U.S. military requires a great deal of mobility from its active duty

members and their spouses. Traditional conceptualizations of geographic mobility,

such as whether or not a spouse has moved, are not adequate to capture the

multidimensional nature of geographic mobility in the military. This study examines

several dimensions of mobility: the number of moves a spouse has made, the average

number of years a spouse experiences between moves, the number of years that a

spouse has lived at an overseas location, and the number of years that a spouse has been living at his or her current location. Data from the 1992 Department of Defense Survey of Spouses are used to answer the question of how these dimensions of geographic mobility affect the employment situation of civilian spouses of military personnel and how their impact differs by gender, race, and class. The results generally indicate that, net of several factors related to employment and earnings, increased levels of geographic mobility are associated with increased difficulty in finding employment, increased dissatisfaction with employment opportunities, decreased levels of employment, and lower annual earnings. Results varied, though, by gender, race, and class. Policy implications of these results are considered and suggestions for future research made.

MOVING WITH THE MILITARY: RACE, CLASS, AND GENDER

DIFFERENCES IN THE EMPLOYMENT CONSEQUENCES OF TIED

MIGRATION

by

Richard Thomas Cooney, Jr.

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2003

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DEDICATION

This dissertation is dedicated to my wife and sons. Without their love, support, and sacrifice, this research would not have been possible.

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CHAPTER I: INTRODUCTION

Soldiering in the U.S. military is an occupation that is relatively unique in the demands which it makes of its employees (Segal 1986). For example, soldiers often risk serious injury or death (even while training), are frequently separated from their families, and often must take up residence in foreign countries (Segal 1986). Some of these demands made by the military on its soldiers may be more accurately described as ultimatums—demands that must be met in order to continue serving with the military or to avoid a court martial or other disciplinary action. Organizations and institutions that are particularly demanding of individuals—those that are able to issue ultimatums—have been aptly labeled as "greedy" by Coser (1986). Coser (1986, p.4, 6) describes greedy institutions as those that:

> ... make total claims on their members and which attempt to encompass within their circle the whole personality. ... they seek exclusive and undivided loyalty and they attempt to reduce the claims of competing roles and status positions on those they wish to encompass within their boundaries. ... they exercise pressures on component individuals to weaken their ties, or not to form any ties, with other institutions or persons that might make claims that conflict with their own demands (quoted in Segal 1986, p.11).

One such ultimatum with which soldiers contend is the requirement that they be extremely geographically mobile, especially in comparison to employed civilians. According to U.S. Census Bureau data, from March 1998 to March 1999, about 17% of employed civilians (age 16 and older) changed residences, with about 80% of these movers moving within a single state (most within the same county) (author's tabulations of CPS data taken from U.S. Census Bureau 2000). Looking at those who

were serving in the armed forces during this same period, about 40% of military personnel had moved, and most of these (about 61%) had moved across state or national borders (author's tabulations of CPS data taken from U.S. Census Bureau 2000). Thus, military personnel are about 2.4 times more likely to move than employed civilians and significantly more likely to move farther distances than their civilian counterparts. In 1998, there were over 730,000 moves made in the military (MFRC 1999). On average, military members move about once every two to three years (Croan, Levine, and Blankinship 1992; GAO 2001b), although the length of time a soldier may spend at any given assignment can vary significantly (e.g., from six months to over six years).

This demand of geographic mobility affects more than just the soldier him/herself. Over the last several decades (at least up until the mid 1990s), the military, especially the enlisted force, has become an increasingly married force (MFRC 1999; MFRC 2000). Currently, about 70% of military officers and 49% of enlisted members are married (MFRC 2000). Thus, despite a slight decline in the marriage rates of military members in recent years (MFRC 2000), the impact of geographic mobility is felt by a large number of civilian spouses and children of military members. Including spouses, children, and adult dependents, the military now supports, and thus impacts, almost 2 million family members of its 1.4 million soldiers (MFRC 1999). Although civilian spouses and other family members do not accompany military members on every move, they usually do.

While geographic mobility is an occupational demand for the soldier, it is an inflexible familial demand for the civilian spouse if the family, as a joint residential

unit, is to be maintained. Although many such spouses enjoy the geographic mobility required by the military, frequent relocation may have negative consequences for them, especially in terms of their employment situation. These spouses experience a "greedy" military family (Segal 1986) which may interfere with the demands of their own jobs as well as their occupational aspirations. For example, those spouses who move frequently may find it difficult to find employment at the location to which their military spouse is assigned or may incur earnings penalties due to fragmented work histories and repeated loss of tenure in their jobs (Scarville 1990). Therefore, this study asks **"How does geographic mobility affect the employment situation of civilian spouses of military personnel?"**

In attempting to answer this question, one must keep in mind that moving with the military (or for any other organization) is not a one-dimensional act, as many of those studying geographic mobility in both the military and civilian sectors would have us believe. Simply having made a move, a common independent variable in many of the studies reviewed later in this project, does not adequately capture the complexity and variability associated with geographic mobility. For example, how many moves a civilian spouse has made, how much time, on average, a spouse has experienced between moves, how long a spouse has been at his or her current location, and how much time has been spent at an overseas location may all differentially influence the employment situation of civilian spouses. Indeed, one of the most important contributions of this study is its demonstration that there are multiple dimensions to geographic mobility and that each of these dimensions influences an individual's employment situation net of the effects of the others.

While it is necessary, it is not sufficient to only examine how geographic mobility affects the employment situation of these spouses as a whole. Civilian spouses of military personnel are not a homogeneous group—they differ on characteristics that are likely to have a significant impact on both employment outcomes and factors that influence such outcomes such as gender, race, and class.

The gender composition of the spouses of military personnel has changed over the years—largely due to the dramatic increase in the number of women serving on active duty in the military that has occurred over the past three decades. The percentage of active duty personnel who are women rose from 1.6% in 1973 at the inception of the all-volunteer force (AVF), to more than 14% in 2000 (Manning and Wight 2000). Although many of these women marry fellow service members (about 20%), a significant proportion of military women marry civilian husbands (MFRC 1999). While researchers have paid some attention as to how the military impacts the civilian wives of military men, the civilian husbands of military women have been largely ignored.

Despite the significant presence of minority groups in the military, especially African Americans, race/ethnicity also has been largely ignored in the literature on military families. Minority groups currently account for more than one-third of all active duty military members, but are especially overrepresented in the enlisted ranks (38.2% of enlisted personnel are minorities), especially in the Army (45.1% of Army enlisted personnel are minorities) (MFRC 2000). There are also gender differences in the racial/ethnic composition of the active duty forces, where minority women are more overrepresented than minority men (Manning and Wight 2000). In fact,

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minority women make up the majority of active duty enlisted women with Black women totaling more than 35% of enlisted women service-wide (Manning and Wight 2000). In the Army, African American women constitute more than 43% of all active duty women and 46.7% of enlisted women (Manning and Wight 2000).

It is also important to consider whether or not social class has a bearing on if and how geographic mobility affects the employment situation of civilian spouses. In the military, one's class is largely defined by one's rank, or in the case of civilian spouses, the rank of the military member to whom they are married. The largest and most rigidly defined class differences can be seen between enlisted personnel and officers. In fact, there are military regulations that prohibit officers and enlisted personnel from fraternizing and which mandate the regular show of deference by enlisted personnel towards officers (e.g., enlisted personnel are required to render salutes to officers). While class is largely defined by the military member, the civilian spouses of these soldiers experience the consequences of such distinctions as well— the civilian spouses of commanders unofficially "outrank" the spouses of lower ranking personnel and the spouses of officers and enlisted personnel are often discouraged from developing close personal relationships.

There are also significant socioeconomic differences between enlisted personnel and officers. An officer who has served in the military over a given time period and has progressed regularly in rank earns approximately twice as much as a comparable enlisted person (*Air Force Times* 2002). Such a class/income disparity may affect the decision of the civilian spouses of military personnel to work, their reasons for working, and the type of employment they accept. While not as evident as

the differences between officers and enlisted personnel, similar differences can be seen between ranks within the broader enlisted/officer categories.

Gender, race, and class are frequently overlooked in the study of the spouses of corporate relocators in the civilian sector. While employed civilians, in general, do not move as much as soldiers, many of them do make one or more moves as a result of a transfer from one corporate location to another (e.g., from a regional office to corporate headquarters). According to Hendershott (1995), such transfers account for about 22% of all interstate relocations. Indeed, some corporations are especially known for the high degree of mobility required of their employees. For example, IBM is said to stand for "I've Been Moved" by its employees (Hendershott 1995). Such corporations are, however, most likely to transfer their mid-level and higher management personnel, who are also frequently White men. Since most of these managers are similar in terms of gender, race, and socioeconomic class (i.e., there is little variance in the class structure of corporate relocators), little attention has been paid to how geographic mobility due to corporate relocation differentially affects those of different genders, races, or classes. Unlike most corporations, the military is an equal-opportunity mover: regardless of your rank within the organization, you can anticipate moving every few years. Thus, studying the military provides a unique opportunity to explore how geographic mobility differentially affects those of different class status.

Given the lack of attention paid to gender and race/ethnicity in the study of the impact of the military on military families and the relative absence of gender, race, and class in the literature on corporate relocation, this study makes an important

contribution to the field by its focus on these factors. Therefore, this study also asks **"Under what conditions and in what ways does the impact of geographic mobility differ by the gender, race, and class of the spouse?"**

In order to answer these questions, I will first address the general mobility patterns of these civilian spouses before exploring several aspects of the spouse's employment situation which may be influenced by geographic mobility to include: reasons for seeking employment, perceptions of opportunities for employment, employment status, type of employment (e.g., full/part time, Federal/non-Federal), earnings, and the degree to which the civilian spouse's employment and the military spouse's work interfere with one another.

Thus, to answer the central questions of this paper, I will pose a series of more specific research questions:

1. Does gender, race, or class affect the likelihood that a civilian spouse will move as a result of their spouse's reassignment?

2. Does geographic mobility influence the reasons why spouses seek employment or limit the perceived opportunities for employment?

3. What are the consequences of geographic mobility in terms of employment status and type of employment?

4. What are the economic consequences of geographic mobility in terms of earnings?

5. Does geographic mobility have implications for the degree to which the jobs of the civilian and military spouses interfere with one another?

For each of these questions, I will explore how the answers differ by the gender, race, and class of the civilian spouse. First, however, I will provide an overview of the various theoretical frameworks used in my analysis as well as

previous research that is relevant to my topic. Drawing on this theory and prior research, I then develop a set of hypotheses to be empirically tested. Next, I describe the methods and data I intend to use in testing my hypotheses and provide a description of the variables used in my analysis. The next several chapters (Chapters V through IX) are devoted to the results of my analysis, generating the information necessary to evaluate my hypotheses and answer these questions. The hypotheses and potential answers are then evaluated and summarized in the discussion and conclusions chapter. Directions for future research are also discussed.

CHAPTER II: THEORY AND LITERATURE REVIEW

Tied Migration

The primary theoretical perspective through which geographic mobility in the military has been examined is that of "tied migration." The tied migration perspective, developed by Mincer (1978) in his analysis of civilian families, suggests that the family, rather than the individual, should be viewed as the decision making unit. Mincer argues that the family migration decision (i.e., whether or not to migrate) is largely a rational one based on the maximization of the returns from migration net of its costs. In other words, will the family gain more than it loses as a result of the move? If the answer is yes, the family will migrate. If the answer is no (i.e., family costs exceed gains), the family will not move.

Mincer (1978) suggests that the maximization of family gains net of costs is not synonymous with maximizing the net gains for each individual in the family. In the case where a family consists of a husband and wife, there may be cases where it is to the advantage of the family and one spouse to migrate, while at the same time being more costly, or having a net loss, for the other spouse. Because of the economic advantages to men (vs. women) in the labor market, Mincer (1978) finds that it is most often that women are those movers who move for the sake of the family, but incur a personal loss. This is what is known as a "tied mover." Using data from multiple sources, Mincer (1978) finds that married women who migrate tend to have higher unemployment rates (and lower labor force participation rates) at the destination of their move than at the origin, which contributes to the earnings penalties they also

experience. These penalties increase with the distance of the move. Men, on the other hand, usually experience a net gain as a result of migration which tends to increase to the extent that their wives are tied movers. Mincer (1978) also describes the concept of a "tied stayer." A tied stayer is an individual who would receive a net gain individually if he or she were to migrate, but because the family would receive a net loss (e.g., the tied stayer's gains would not outweigh the total cost to both spouses, and, more specifically, the net loss of the other spouse), the tied stayer is unable to take advantage of the benefits of migration.

In military families, elements of both tied moving and staying impact the civilian spouses of military members. The civilian spouse is a tied mover in the sense that he or she must move (assuming the desire to maintain joint residency), regardless of the personal cost to himself or herself. Once that spouse has relocated, however, he or she may also be seen as a tied stayer. Due to the military requirements of the soldier, who must remain relatively close to the installation at which he or she is stationed, the ability of the civilian spouse to take advantage of migrating to a more advantageous labor market for individual gain is limited. Tied staying may be especially costly for wives in the case of the military. This is largely due to the nature of the labor market in which they are captive. Booth et al. (2000), using 1990 census data, find that labor markets in which the military plays a dominant role (defined as employing more than 5% of the labor market, e.g., those surrounding major military installations), are detrimental to the employment and earnings of women. Women living in labor markets with a large military presence experience higher unemployment than those who live in non-military labor markets (7.9% vs. 6.6%).

These higher rates of unemployment are primarily experienced by white women, whose jobless rate is estimated to increase 1.2% for every 10% increase in the proportion of the labor market that is military (Booth 2000). Men do not appear to exhibit a similar loss of employment opportunity. Women who are employed in high military labor markets earn, on average, about $800 less per year than those who work in non-military labor markets (Booth et al. 2000). It is important to note that these labor market disadvantages are experienced by women in general and wives of military men suffer further, earning 16% less than women married to civilian men (Booth 2000). Any labor market disadvantage due to the presence of the military or other structural components of local labor markets may be especially difficult for wives of military men to escape given that women place greater emphasis on proximity to their homes than do men in searching for a job—largely due to their domestic responsibilities (Hanson and Pratt 1991).

White and black women, as well as white men, are also found to be less able to convert their education into earnings in labor markets with a large military presence. Women's return on their education (both black and white) decreases about 8% for every 10% that the military presence in the labor market increases, while white men realize a 7% drop in returns to their education (Booth 2000). Black men actually receive a small increase (2%) in their returns for education for such an increase in the military presence in the local labor market.

Furthermore, since the decision to migrate is constrained by military policy, there is no guarantee that the net gains to a family will outweigh the costs of moving. In fact, if we view each move as theoretically having a net gain of zero for the military

member, at least in the short run (e.g., they will be paid the same basic pay at their new location and their housing allowance will be adjusted for housing prices in the local area), any net cost for the civilian spouse will make such a move a net loss for the family. Many military families will also incur move-related expenses (e.g., a security deposit on an apartment or transportation of the family pet) that are not directly covered by the military and may place the family in financial trouble (Wolpert, et al. 2000). According to the GAO (2001b: 1), "mid-grade and senior noncommissioned officers (enlisted personnel in grades E-5 to E-9) average more than $1000 in nonreimbursable expenses each time they move. Among officers, members' out-of-pocket costs are even greater." In addition, the frequency and rapidity with which such moves occur for military families as well as their mandatory (i.e., often non-voluntary) nature, introduce another dimension to the "tied migration" perspective which is somewhat unique to the military. To the extent that the influence of tied migration on employment status or earnings may be temporary in nature (e.g., Spitze 1984), it must be remembered that military families move, on average, every two to three years, and, thus, may never fully recover from the previous move before having to relocate again.

There is also a normative aspect to moving in the military that is not addressed by the tied migration framework. Since practically all soldiers and their families move on a regular basis, soldiers and their civilian spouses may develop expectations about moving and its consequences that affect the employment situation of civilian spouses as much as the moves themselves. For example, one could easily imagine a civilian wife, whose military husband is in the third year of his current assignment, and who

desires to work outside the home, deciding not to seek employment because of an impending move. Such expectations might also influence the type of employment and occupations occupied by civilian spouses. Knowing their stay at any given location is likely to be limited, civilian spouses may seek job-oriented rather than career-oriented employment (e.g., part-time work) or engage in occupations that are relatively transportable to other locations.

Soldiers and their civilian spouses are not the only ones who are likely to have expectations about their mobility; employers in the local labor market are also likely to have expectations. Such employers may be reluctant to hire civilian spouses of military personnel as they can expect to have to recruit and train a replacement in a relatively short period of time. Those who do hire the civilian spouses of military personnel may track them into non-promotable positions or otherwise limit their employment opportunities, again with the expectation that they are hiring a "temporary" employee. Knowing this, the expectations of civilian spouses about the availability of acceptable civilian employment may be diminished.

Human Capital and Migration

Implicit in the tied migration framework is the human capital perspective. Human capital theory is largely a cost/benefit analysis of the decisions one makes in life controlling for the attributes with which one is endowed (Phillips et al.1992). The costs and benefits of these decisions are often measured in terms of socioeconomic status, e.g., occupational prestige, income, or educational attainment. Decisions that result in an increase in an individual's potential to raise his or her socioeconomic status

are said to be beneficial and can be conceptualized as a gain in human capital. For example, an individual who decides to attend a four-year college immediately after graduating from high school instead of entering the labor market directly will incur the cost, in many cases, of having to pay tuition and forgoing earnings by not working or working part time or in a job with limited prospects for a career. However, after graduating from college, one's income is likely to rise dramatically (above that of the direct entry laborer) as a result of the added human capital which his or her degree provides. Thus, the life decisions one makes can be seen as investment decisions (Phillips et al. 1992; Fredland and Little 1985). Investments are made based on the calculated payoff of the training, education, or experience gained from any given choice. One such choice that many individuals make is whether or not to invest in a move to a new geographic location.

Human capital, such as education or work experience, is rewarded in the marketplace socioeconomically because such capital is linked (or assumed to be linked) to a worker's productivity (Blau, Ferber, and Winkler 1998). Certain types of human capital, however, are more geographically portable than others. Dierx (1988), for example, describes two types of human capital: non-specific human capital, which can be used at any location, and location-specific human capital that contributes to a family's or individual's productivity primarily within a certain geographic location. According to Dierx (1988: 384), "Location-specific capital might include experience with the production process in the industry that is dominant in a certain region, or knowledge of the employment possibilities and wage structure in a certain area, etc."

When an individual or a family migrates, the cost of the loss of socioeconomic returns on location-specific capital must be considered. The further one moves away from a given location, the less value the location-specific human capital earned at their original location will have (Dierx 1988). For spouses of military members, who routinely make long-distance moves, including those to foreign countries, the loss of location specific-capital may, at least in part, explain any employment or earnings penalties associated with such a move. However, Dierx (1988) also notes that those returning to a location from which they have previously migrated, will again be able to take advantage of the appropriate location-specific human capital. While data are not available on the extent to which soldiers and their families are assigned to a base to which they have previously been assigned, it is certainly not an uncommon experience in the military. In addition to location-specific human capital, an individual may also have a certain amount of firm-specific human capital—human capital, such as experience with and knowledge of a specific organization's production process. Firm-specific human capital would be portable to the extent that an individual continues to be employed by the same company in his or her new location (e.g., transfer from a Federal job in one location to another Federal job in another location or from one McDonalds to another).

Since women, in general, have a more discontinuous work history than do men (largely due to the domestic responsibilities culturally assigned to women, such as childrearing), women are often less able to both build and reap the benefits of their human capital (Markham and Pleck 1986). Discontinuous work histories directly limit the amount of work experience an individual can accumulate and may interfere with

skill development (Markham and Pleck 1986). Furthermore, those women who anticipate a discontinuous work experience may seek jobs where experience or on-the-job training is less valuable (Blau, Ferber, and Winkler 1998). On the other hand, employers who anticipate that women employees will have such a discontinuous work history may be less willing to provide women with opportunities to increase their human capital, such as through firm-specific training programs (Blau, Ferber, and Winkler 1998). If women, either because of their more discontinuous work histories or employers' unwillingness to invest in them, have less firm-specific or location-specific capital than do men, they may actually be less penalized for their migration than men because they will not feel the loss of the depreciation of such capital. However, as I will show in the following section, we know much more about the influence of migration on the trailing wife than on the trailing husband.

Tied Migration: The Civilian Evidence

Despite the apparent lack of fit between the tied migration framework and geographic mobility in the military, moving in the military has been almost exclusively framed by it in the published literature. While the assumptions about the migration decision may be especially problematic, research under the tied migration rubric does provide evidence about the influence of geographic mobility on the employment situation of individuals. In this section, I will discuss the literature on non-military geographic mobility and spousal employment before addressing the military spouse specifically in the following section. The literature on civilian family migration can be roughly divided into two groups: studies that address the decision of

whether or not to relocate and those that address the impact of relocation. As there is some overlap between the groups, I will discuss each article under the group in which it appears to have made the most significant contribution.

The Decision to Move

Bird and Bird (1985) used data from a national survey (un-named in the article) on 107 dual career and career-earner couples. The couples were very well educated (e.g., 60% of all men had Ph.D.s and 71% of career women had at least a Master's degree) and many worked in an academic setting. These couples were asked about various factors that influenced previous geographic mobility decisions as well as their potential impact on future mobility. Overall, these researchers found that both husbands and wives indicated that it was the husband's job that was of primary importance in their last move. The significance of the husband's job in previous migration decisions increased, according to the husband, with his income as well as the importance he placed on his role as parent (e.g., provider). The husband's income and strength of his parental/provider role attitudes also were strong predictors of the husband's job being considered of primary importance in future mobility decisions. However, husbands who had wives in higher status jobs and who held more egalitarian sex-role views were more likely to consider their wives' employment in future moves. More weight was given to the wife's occupation by the wife in the migration decision when her income was higher (both absolutely and relative to the husband's income) and she held the attitude that her husband should be a co-provider/co-parent.

Markham and Pleck (1986) used data from the 1977-1978 Quality of Employment Survey to study the gender differences in willingness to move for occupational advancement. The survey asked respondents, who were at least 16 years old and employed at least 20 hours a week, "Suppose you were offered a job that was much better than your present one, but located in a community at least 100 miles away. How willing would you be to move to the other community to take a better job?" (Markham and Pleck 1986: 129). They found that gender, even after controlling for several other factors with potential mobility implications, was a strong predictor of whether or not an individual would be willing to move with women being the less willing. Gender was especially important for those individuals who were married. Across the various models presented in this article, the findings (in addition to those on gender) that appear most consistent are those involving age, perceived income adequacy, and marital status. Those who are older may have less time to recoup the cost of such a move and may incur greater costs for such a move (e.g., loss of seniority or home ownership) and would thus be less willing to make the move. Those who perceive their current income to be inadequate may be more willing to make such a move to take advantage of this opportunity to increase their income. These researchers explain that those who are married should be less willing to move based on the possibility of having to incur the employment and earnings penalties associated with their tied mover spouse. Interestingly, though, whether or not the spouse of the surveyed individual was employed was not a significant predictor of willingness to move, although gender differences in this result were not discussed.

Rives and West (1993), however, also find that the wife's employment status by itself is not a significant determinant of whether or not a couple will decide to move. In this study, these researchers were able to survey almost 500 employees (all were men) of a single company that was relocating their entire company approximately 600 miles away. The employees surveyed were all given the opportunity to move with the company. Two-hundred twenty four employees (and about 82% of their wives) completed surveys. Although the wife's employment status was unrelated to whether or not the couple decided to move with the company, her earnings (both absolute and relative to the husband) and her labor force attachment (measured by years of continuous employment) was. Those families where wives earned more than $15,000, earned a larger proportion of the family's income, and/or had higher labor force attachment were less likely to make the move. Those workers who had been employed longer with the company and those who had more children were more likely to make the move—probably to avoid losing the seniority premium which they had gained with this company and for fear of not finding a job that would adequately support their larger family.

Bonney and Love (1991) descriptively examine a small sample of migrants who moved into the Aberdeen, Scotland area in 1986. Of the 72 married men in their sample, 28% moved because they had been transferred to Aberdeen by their employer, 52% moved to Aberdeen because they had secured a job there, 19% moved to take up education, marry, or for other reasons, and only 1% moved there because of their wife's job. The situation for married women is almost completely reversed. Of the 104 married women in the sample, none moved because of employer transfer, 3%

moved because they had secured a job there, 28% moved to take up education, marry, or for other reasons, and 69% had moved because of their husband's job. When asked about the impact that the move to Aberdeen had on their careers, 29% of the women who moved because of their husband's job rated the move as helpful to their careers and 45% claimed that it made no difference to their careers. Those women who moved for other reasons reported that the move was helpful 49% of the time and made no difference in 26% of the cases. Therefore, while women moving for their husbands' jobs may find that the move is less helpful to their careers, more often it simply makes no difference. According to the researchers, this has much to do with the occupations these women desire and their availability in the local labor market. Many of the women to whom the move made no difference were trained in relatively transportable occupations such as nursing and teaching or were housewives. However, caution must be exercised in trying to generalize too much from one labor market area.

Bielby and Bielby (1992), using the 1977 Quality of Employment Survey also used by Markham and Pleck (1986), emphasize the importance of gender role ideology in the migration decision. They find that husbands who have traditional gender role beliefs tend to completely ignore the wife's employment situation, including her earnings (even if they are substantial), in deciding whether or not they would move. Traditional wives would not ask their husbands to move from a well-paying job, regardless of the opportunity for advancement. Bielby and Bielby (1992: 1259) conclude that "men pursue their own self-interest, while women evaluate what is best for the economic well-being of the family." Differences between the decisions

of men and women as to whether or not they would move are less when examining those with less traditional gender role beliefs. Thus, the decision to migrate is unlikely to be as rational or as "symmetrical" as economists such as Mincer (1978) would have us believe. The decision to move does not appear to be based solely on economic utility, but is likely mediated by other factors such as gender role ideology and, given the results of other studies cited above, the relative resources of the spouses. In addition, other ties to an area, such as friendships and close proximity to extended family, or the lack of such ties, may influence the migration decision.

Academia is one realm in particular in which both geographic mobility and geographic constraint can operate on the careers of the spouses of the academics, especially the wives of male academics (many of whom are academics themselves) (Kauffman and Perry 1989; Deitch and Sanderson 1987). Kauffman and Perry (1989), in a qualitative study of the geographic constraints placed on academic women, highlight some of the particular problems. Two particular rules, often unwritten, can be especially detrimental to a woman's academic career: the policy of many universities not to hire their own (or near-by produced) Ph.D.s (especially into tenure-track positions) and the anti-nepotism policy of not hiring a husband and wife, especially into the same academic department. Kaufmann and Perry (1989: 656) report that such policies discriminate against women "because they very often get their degrees from the institution where the husband is located." Thus, women Ph.D.s in such a situation can be seen as tied stayers—unable to take advantage of moving because of the constraints of their marital bond and unable to find employment commensurate with their education because of university policies.

In their study of faculty wives, Deitch and Sanderson (1987) also find that women receive penalties for the geographic constraints imposed on their careers. In a survey of faculty spouses, these researchers find that 79% of career women had moved at least once for their husband's career. Such moves resulted in a job loss or a career interruption at least once for 46% of the wives. On the other hand, only 2% of the faculty wives reported that their husbands made such a move for their career and only 23% of the husbands of women faculty had ever moved for their wife's career. Sixty-three percent of the women faculty had moved for their husband's career. When asked how their job searches have been geographically constrained by their spouse's career, 45% of the wives of the male faculty responded "a lot," while only 19% of the husbands of female faculty responded similarly. Those women with "the most education, salaries most equivalent to their husbands', highest career commitment relative to their husbands', greatest career involvement ..., and fewest children felt the most geographically constricted" (Deitch and Sanderson 1987: 623).

The Impact of Geographic Mobility

The reasons why a family moves as well as the move itself can have significant and often negative impacts on one of the spouses, most frequently the wife. Shihadeh (1991), using a sample of 2,674 Canadian families with children who moved either into or out of the Canadian province of Alberta between May and September of 1987, explored the reasons members of these families gave for moving and how these reasons were associated with employment outcomes, especially for wives, at their new location. Interestingly, 74% of the wives stated that they were moving in order to

follow their spouse, while only 4% of husbands gave that reason. Shihadeh (1991) argues that this represents the "subsidiary role" women play in family migration. Most husbands (80%) gave economic reasons for moving (compared to 12% of wives). Although Shihadeh expected human capital, in the form of education, to be a strong predictor of post-move employment, it was not. Instead, Shihadeh (1991: 432) found that "the most powerful determinant of employment returns among wives was not their economic and demographic background characteristics but whether or not they played a subsidiary role in the family migration. The odds of obtaining post-migration employment were substantially decreased for those wives who deferred to their husbands in the reason to move." Unfortunately, this study did not look at those husbands who deferred to their wives, although their numbers would likely have been too small for analysis anyway.

Examining the influence on wives' employment and using data from the National Longitudinal Surveys of Young Women and Mature Women, Spitze (1984) finds that wives who moved across county lines or out of a standard metropolitan statistical area (SMSA) experienced a decline in likelihood of employment and a decrease in the number of weeks worked following a move. Overall, the annual earnings of employed women decreased about $700 immediately following the move—a significant portion of their approximately $3,000 annual income (1967 dollars). Spitze also finds, however, that these negative consequences of migration are relatively short-lived. Employment status and weeks employed penalties had disappeared within two years of the move and earnings penalties disappeared even

more quickly. She concludes that migration may be of long-term consequence only for those who move frequently.

Maxwell (1988) pooled migrants from several waves of National Longitudinal Survey (NLS) data over a 12 year period to create a relatively large sample of white men and women who had moved across county lines. Maxwell (1988) specifically compares the wages and earnings of migrants and non-migrants by gender and marital status. She finds that while marriage does not impose any penalties on men in terms of their ability to reap the benefits of migration, married women who migrate show an immediate decrease in earnings upon migration, although the marriage "penalty" decreases with time after the move. Maxwell (1988) also finds that married women who are tied stayers (i.e., tied to a specific labor market and unable to take advantage of migration) also suffer significant earnings penalties.

Morrison and Lichter (1988) study the influence of inter-county migration on the employment situation of married and single, never married women using the National Longitudinal Survey of Labor Market Experience. These researchers find migration penalties—especially in terms of increasing underemployment—for both single and married women, but such penalties vary. According to Morris and Lichter (1988: 170), "Married migrants suffer more from labor market inactivity and sub-unemployment [i.e., discouraged workers]/unemployment, while single migrants are more likely to be employed, but underemployed by low hours, low income, and occupational mismatch." Thus, using employment status alone is not sufficient to determine the influence of migration on individuals, as underemployment and sub-unemployment are also important considerations.

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Krieg (1996) used longitudinal data from the Panel Study of Income Dynamics (PSID) in his analysis of the influence of migration on the earnings of single and married men and women during the period immediately following the move through three years afterwards. For single men, migration seems to have no immediate impact on earnings unless it is also accompanied by a change in occupation, in which case single men receive an earnings penalty. On average, however, single men receive an earnings premium in the year following migration with no significant impact of the migration felt in the second or third year following the move. For single women, an immediate negative impact is experienced following a move. However, in the three years following the move, the migration does not appear to have negative consequences for them. Married men receive an initial earnings premium immediately following a move, but then experience a slight penalty in the first year after the move and no significant impacts from the move in years two or three. The migration of married women did not have any impact on their earnings either immediately or in the years following the move, although those who changed occupations in conjunction with the move did experience an immediate penalty. Thus for single men and married women, changing occupations in conjunction with a move appears especially detrimental. In the long run, however, the impact of migrating appears to be minimal for all groups. This study excluded, though, those who had made more than one move. It may be possible that there could be cumulative effects associated with repeat migration.

Jacobsen and Levin (1997) also compare the net returns from migration to both single and married men and women. Their data are drawn from the Survey of Income

and Program Participation (SIPP), which is a relatively large multi-panel data set constructed by the U.S. Census Bureau. These researchers combine the four panels into one data set containing almost 75,000 individuals. Migration is defined by those making interstate moves. The dependent variables in this study are the growth rates of various measures of income. Comparing these growth rates and controlling for various demographic factors, they find that contrary to other studies, couples who migrate do not seem to profit from migration. In fact their growth rate tends to be negative. The authors argue that the reasons couples migrate may be changing. Instead of being pulled towards other labor markets to take advantage of increasing opportunities, couples may be pushed out of certain declining labor markets to avoid more negative consequences. Comparing married and single men, these authors find that neither gain significantly from migration (relative to non-migrants). Single women, however, experience significant positive gain from migration in terms of personal income compared with single women non-migrants. Married women migrants, however, suffer a personal income penalty when compared to married women non-migrants. This penalty is largely explained by the tendency of married women to move from full-time employment to part-time employment after the move.

Boyle, Cooke, and Halfacree (2001) provide further evidence of the penalties of migration for women, using a cross-national database constructed from the 1991 Great Britain Census Sample of Anonymised Records (SAR) and the 1990 U.S. Census Public Use Microdata Sample (PUMS). For the purposes of this project, it is noteworthy that couples were excluded from this data set if either partner was a member of the armed forces. They find that in both Great Britain and the United

States, married women who migrate with their partner over a long distance (more than 50 km) are most likely to be unemployed or not in the labor force relative to others (men and women) who moved shorter distances, did not move, or moved as individuals.

In a related study, using the same cross-national data described above, Boyle et al. (1999) focus on the role of relative occupational status in addition to gender in the influence of migration on individuals in a coupled relationship. They find that those women migrants whose occupational status is greater than that of their husbands are less likely to be unemployed or economically inactive than those women whose occupational status is lower than that of their male partner. While women in non-traditional couples (i.e., where the women's occupational status is higher than that of the man) had an advantage over women in more traditional relationships when migrating, they did not have an advantage over men in similar relationships. Women in traditional relationships who moved a long distance were most likely to be unemployed or not in the labor force, although women in non-traditional relationships followed as a close second. One surprising finding not explained in the article is that men in traditional couples were more likely to be unemployed or economically inactive than their counterparts in non-traditional couples across each migration category (e.g., non-migrating, long-distance migrant).

Cooke (2001), however, suggests that while married women, in general, may receive some penalty when they migrate with their husbands, it is mothers who are most penalized. Using a sample from the 1987-1992 Family File of the Panel Study of Income Dynamics (PSID), Cooke examines the influence of a single migration on the

labor force participation and employment of married women. This researcher finds that migration had no significant effect on the labor force participation of non-mothers, but a significant long-term effect on that of mothers. In terms of employment, Cooke finds that non-mothers are impacted negatively in the short-term, but such an impact does not last. For mothers, however, the short-term effect of migration is non-significant, but the long-term negative impact of migration is quite strong. Thus, Cooke suggests that studies of tied migration may be better framed as studies of "trailing mothers" instead of "trailing wives."

Cooke's (2001) study is especially important in that it is one of the few studies to address parental status. Given the importance of gender ideology in other studies, motherhood was surely a missing piece in the literature. It is unclear, however, how fatherhood might influence the gains or costs associated with family migration for men. Given that most childrearing tasks have traditionally been assigned to and accomplished by women, the influence is likely to be minimal, unless the father has significant childcare responsibilities. Indeed, the role of father and breadwinner are often so intertwined that becoming a father may lead to more emphasis on the father's work and the sacrifices he and his family must make for him to fulfill that role. Pleck (1983: 316) describes the traditional male breadwinner as the supporter of his own miniature "welfare state." To the extent that the size of the "state" increases, the breadwinner's role becomes even more important.

The especially harsh impact of family migration on mothers is not particularly surprising given that employee assistance programs and mental health professionals frequently emphasize (directly and indirectly) that the mother's role during a move is

to "organize, care for and shore up family problems" (Lundry 1994: 103)—a full time

job in and of itself. Not only is such a role consuming of time, energy, and other

personal resources, it also limits the role of the husband in helping to ease the family's

adjustment to its new location—"further imposing expectations on the women"

(Lundry 1994: 103).

While much of the tied migration research has found that the disadvantages of

migration have been felt more by women than by men, much of this research does not

control for the reasons why the couple migrated. Those articles that do address the

reasons why families move overwhelmingly indicate that it is usually for the

husband's employment opportunities. Thus, the results of the literature I have

reviewed may be better termed as applying to husband-centered migration rather than

tied migration more generally. Indeed, some would argue that using the family as the

decision-making unit is inappropriate to begin with and only masks the more

particular interests of husbands who drive the decision-making (Ferree 1990).

To say that the literature on trailing husbands in the corporate sector is scarce

would be an understatement. Few articles even broach the topic. However, in the

corporate sector, about 10% of all relocations for work in 1994 involved a trailing

husband—a percentage that has doubled since 1980 (Hendershott 1995). Trailing

husbands must contend with gender norms that are much different and, in some ways,

more demanding of them than trailing wives. For example, "society still allows

women a grace period of unemployment before condemning them as a failure," while

men are expected to gain employment immediately following a move if not before the

move actually occurs (Hendershott 1995: 65). Anecdotally, some have reported that

trailing husbands have more difficulty finding work than trailing wives (Hendershott 1995). Additionally, there appears to be pressure not only for the trailing husband to find employment, but to find employment commensurate with his abilities and desires. "Trailing wives are much more likely than trailing husbands to 'settle' for lesser positions" (Hendershott 1995: 67). Thus, while women may accept underemployment as an alternative to unemployment, men may be less willing to do so. Interestingly, though, Hendershott (1995) reports the results of one study that indicate that trailing husbands are five times more likely to receive some sort of spousal assistance than trailing wives. It appears that companies are either more concerned about the influence of relocation on trailing husbands, trailing husbands take more advantage of spousal support services, or the working wives of the trailing husbands are more likely to request or encourage such support for their spouses.

Race and ethnicity also have been largely ignored in the tied migration and family migration literature, though a few exceptions do exist. Boyle, Cooke, and Halfacree (2001), using the cross-national data set described earlier, do not find a consistent disadvantage for various ethnic groups in either Great Britain or the United States in terms of unemployment or labor force participation. Toliver (1993), based on a series of interviews with 187 black managers within eight Fortune 500 companies and their families, concluded that corporate relocation poses certain difficulties for black families that may not be experienced or experienced to the same degree by white families. Of primary importance are problems motivated by social isolation and physical distance from kin support networks. According to Toliver (1993: 119), "Oftentimes, relocation means moving to small towns and communities where blacks

are in a numerical minority." In such situations, couples and their children may know very few others who share their background and culture in order to build friendships and support networks. Work does not seem to provide the same source of support for blacks as it does whites. In this study, 87% of white managers, but only 5% of blacks rated work as their primary source of friendship. The absence of such friendships may lead to exclusion from informal networks which could provide advancement within the organization as well as possible leads in helping the spouses of these managers to gain satisfactory employment.

The Case of the Military

Comparing Military and Corporate Movers

Relocation in the military has many differences from, as well as some similarities to civilian relocations. Corporate relocations are often a function of "'back room deals' and informal negotiations which take place well before an invitation [to relocate] is ever extended" (Hendershott 1995: 22). The typical relocated corporate employee is a "37 year old white male homeowner. He is married, has two children, and works in sales and marketing," most likely in middle management (Hendershott 1995: 26). The willingness to make such relocations is usually associated with upward mobility within a corporation (Hanks and Sussman 1993). Refusing to relocate is often seen as a sign of disloyalty to the company and may reduce an employee's opportunity for advancement. Despite the possibility of negative consequences, employees continue to exercise their choice not to relocate. Summarizing findings from relevant research, Hanks and Sussman (1993: 103) state

that "Workers are currently refusing relocation at a rate of over 40%, up from under 10% in 1973." Women, in general, are less likely to relocate for their company than men, making up only 17% of corporate relocations (Hendershott 1995). It may be that women are not invited to move, refuse to move, or make it known that an invitation to move would not be welcome. For those married employees who do make the move for their company, spouses usually receive little support in finding employment at their new location. Less than 10% of all companies who regularly move their employees have formal spousal employment assistance programs (Hendershott 1995). This is surprising given that about half the couples that are relocated by corporations today are dual-earner couples, many of which are dual-career (Hendershott 1995).

The military's policy on relocating its soldiers is much more universal—everyone is expected to be able to move at any time. On average, military members move about once every two to three years (GAO 2001b; Croan, Levine, and Blankinship 1992), although the length of time a soldier may spend at any given assignment can vary significantly (e.g., from six months to over six years). A recent GAO (2001b) report found that the average duration between moves during an active duty soldier's career was less than one year for 20% of active duty personnel, between one and two years for 29% of soldiers, between two and three years for 29% of soldiers, between three and four years for 13% of soldiers, and more than four years for 9% of soldiers. Unlike most corporations, the military maintains hundreds of locations both inside and outside the continental United States to which soldiers and their families can be permanently assigned. Of those stationed in the United States,

88% are stationed within 20 states and the District of Columbia (MFRC 1999)[*].

Approximately 18% of military personnel are stationed in foreign countries, most of them in Europe (MFRC 1999).

One should note, however, that: "permanently assigned" or a "permanent change of station" (PCS) does not imply that a soldier and his or her family will never move again—permanent is defined by the military as being an assignment lasting six months or more (e.g., a one-year assignment would be considered a permanent assignment). Such an assignment is distinguished from a temporary duty assignment (TDY), which typically lasts less than six months and which usually does not involve the transportation of household goods (or family members) to that location (they often remain at the soldier's permanent station while he or she is on temporary duty). In addition, soldiers are given *orders* to move, not *invitations*. While soldiers may have some input as to where they will be assigned, the needs of the military drive military relocation decisions. Failure to follow reassignment orders will at a minimum be a cause for involuntary separation from the military and will likely result in more severe disciplinary action. Certainly some soldiers are able to have their orders changed after they have been issued (e.g., through negotiating with the personnel making assignments or a phone call to a sympathetic superior officer in a position of influence), but these are the exceptions rather than the rule. While no data are available as to the percentage of soldiers who refuse to relocate when ordered to do so

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[*] In order from having the most to the least active duty personnel, the top 20 states are: Virginia, California, Texas, North Carolina, Georgia, Florida, Washington, Hawaii, South Carolina, Kentucky, Illinois, Colorado, Oklahoma, Maryland, Arizona, Mississippi, Missouri, New York, Kansas, and Alaska (MFRC 1999).

or who manage to have their orders changed, the number is likely to be extremely small.

Like corporate movers, relocating soldiers are likely to be white and male—approximately 86% of the military is male and about two-thirds are white (MFRC 1999). In the case of the military, though, migration is not necessarily husband-centered, but soldier-centered. Civilian spouses, husbands and wives, must follow their soldier (if they want to continue to live together and/or remain married), often across great distances. Because civilian husbands of military women experience a wife-centered migration, they are unlikely to experience the advantages gained or the penalties avoided by their migrating civilian counterparts married to civilian women. In fact, given that men are traditionally assumed to have a more continuous work history than women (Blau, Ferber, and Winkler 1998) and may be rewarded more for such continuity than women in the labor market, civilian husbands of military women who move more frequently may be even more penalized than the civilian wives of military men. They may no longer be able to meet the demands of the "ideal worker" norm—working full-time, putting in overtime, and being able to move for work (Williams 2000)—due to the demands of their military spouses' occupation. While civilian wives of military men may also be limited in their ability to be "ideal workers," men have traditionally been expected to fit that mold and may be more heavily penalized for violating this norm.

Despite being "soldier-centered" in terms of geographic mobility, not all soldiers are equally likely to move. Aldridge et al. (1997) find that, controlling for a variety of factors in a regression analysis, male officers and enlisted personnel are

likely to move more frequently than their female counterparts. Thus, civilian wives are likely to be more geographically mobile than civilian husbands. This finding may be driven, at least in part, by the fact that men and women continue to be concentrated in different jobs within the military (e.g., certain occupations and positions remain closed to women such as infantry, submarine duty, and forward air controllers), which may have different mobility requirements. In addition, these authors find that minority officers and enlisted personnel move less frequently than their white counterparts. As with relocation in the civilian sector, geographic mobility in the military may pose certain challenges to minority groups unique to their minority status. Military members and, thus, their spouses, are also significantly younger than their civilian counterparts. According to the Military Family Resource Center (MFRC 1999: 10), "Whereas the majority of the military workforce is young with 80 percent age 35 or younger, by contrast only 40% of the civilian workforce is age 34 or younger." Indeed, about 50% of the enlisted force is less than 26 years old (MFRC 1999).

Also unlike their relocating corporate counterparts, military families are less likely to own a home. This is likely a partial function of the age differential, as well as frequent geographic relocation and the lack of support from the military for home ownership (compared to the corporate sector). About 44% of active duty members stationed in the continental United States and 63% of those stationed outside the continental United States live in military-provided base housing (MFRC 1999). Of those who do not live on base, a significant number are likely to rent rather than own a home. According to the GAO (2001a), about 30% of military personnel own homes,

but this number varies greatly with length of service. For those with five or less years of service, 14% own their homes while 53% of those with 20 or more years of service own their homes (GAO 2001a). Also unlike some corporations, the military does not assist its soldiers in selling a home when they are reassigned or purchasing a home upon arrival at a new location (although military personnel do receive up to 10 days off to locate a house and are eligible for Department of Veterans Affairs loan benefits). Thus, difficulty in selling a home at the time of a move can be especially costly.

The soldier relocated by the military is also very likely to have a family. Currently, more than 50% of enlisted personnel and more than 70% of officers are married, although male soldiers are more likely to be married than female soldiers (56% vs. 44%) (MFRC 1999). Many service members also have dependent children. According to the GAO (2002), about 45 % of active duty personnel have children. Looking at married couples with one military member and one civilian spouse, Stander et al. (1998) find that about 77% of couples with a civilian wife and military husband have children, while only 61% of couples with a civilian husband and a military wife have them. Those soldiers who have dependents (e.g., children) tend to have the longest tour lengths, while marriage also tends to increase the average length of a tour over one's career (GAO 2001b).

The Civilian Spouses of Military Personnel

In the past, the civilian wives of soldiers, especially those of officers, were considered part of a two-person career (Papanek 1973). There were expectations that

the civilian wives of military men would sacrifice their careers, or potential careers, in order to accept full responsibility for the domestic "duties" of such a wife. Such duties would include not only those tasks traditionally assigned to women (e.g., housework and childrearing), but other mandatory "volunteer" activities such as participating in the officers' wives club, as well as preparing their home for and entertaining superior officers and their wives. In essence, as in the case of many married corporate executives, married officers brought to the organization not one, but two "workers"—themselves and their wives (Kanter 1977a). According to Harrell (2001: 56), "As recently as the 1970s, the degree to which an officer's wife performed as expected could officially be included in the officer's professional evaluation." Indeed, it was not until 1988 that the DoD issued a memo instructing the various services not to use the performance of an officer's wife as a basis for promotion or assignment opportunities (Harrell 2001).

As there is no "corporate husband" equivalent of the "corporate wife" in the civilian sector (Kanter 1977a), there is no "officer's husband" equivalent of the "officer's wife" in the military. The trailing military husband, although apparently exempt from much of the expectations which have encompassed the role of the trailing wife, experiences a different demand—to participate in the labor force. Whereas civilian wives of military men have been encouraged to be stay-at-home moms or to limit their employment, the civilian husbands of military men are normatively not permitted the option of staying at home or limiting their employment for the sake of their family (Bourg 1995). According to Bourg (1995: 11), "Civilian husbands not working outside of the home report that they constantly have to defend their decision

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to the community of wives." Thus, the civilian husbands of military women may be more likely than the civilian wives of military men to be in the labor force (even if as an unemployed worker), despite experiencing similar levels of geographic mobility.

Commensurate with the growing participation of women more generally in the labor force, the increasing necessity of military families to have two earners, and the easing of military requirements/duties for most civilian spouses of military personnel, the number of civilian spouses of military personnel in the labor force has grown dramatically over the past several years (MFRC 1999). In 1999, 55% of civilian spouses of officers were in the civilian labor force (48% employed, 7% unemployed), while 63% of enlisted members' civilian spouses were (55% employed, 8% unemployed) (GAO 2002). According to one report, civilian spouses of military personnel "contribute up to 40 percent of the family's income" even though they earn "24 to 30 percent less than their civilian counterparts" (GAO 2002: 6).

Much of the research involving military spouse employment has focused on comparing the wives of military men to the wives of civilian men and specifically addresses geographic mobility through the tied migration framework. For example, Payne, Warner, and Little (1985) use a sample drawn from the March 1985 CPS and the couple file (i.e., spouses matched with their military member) of the 1985 Department of Defense survey. They compare the labor force participation rates and earnings of the civilian wives of military personnel to the civilian wives of civilian husbands. They find that, overall, the civilian wives of military men are significantly less likely to participate in the labor force and earn 5.4% less weekly and 18.4% less annually than those civilian wives with civilian husbands. They estimate that each

relocation "costs wives who were forced to leave their jobs in order to relocate almost a year's worth of earnings" (Payne, Warner, and Little 1985: 336). They conclude that earnings for wives of military husbands are lost, in part, due to decreased employment and a decreased ability to convert human capital (specifically education) into earnings, relative to the civilian wives of civilian husbands.

Gill, Haurin, and Phillips (1994) use the 1985 data set from the Department of Defense survey, as well as a sample drawn from the 1982 wave of the National Longitudinal Survey of Youth (NLSY). These authors find that each geographic relocation permanently decreases the potential wage of a full-time employed military wife by 2.8%. Such a decrease in wage decreases the opportunity costs associated with these wives having children. This study finds that geographic mobility both indirectly (through the negative effect on earnings) and directly affects the fertility expectations in these couples—increasing mobility leads to increasing expected completed fertility. While the authors do not discuss the potential reciprocal effects of fertility on employment, it would seem that those wives who are geographically mobile and choose to have additional children may be especially penalized by the military lifestyle in terms of their employment and earnings opportunities, if they remain in the labor force at all.

Schwartz, Wood, and Griffith (1991) use the couple data set from the 1985 DoD survey and limit their sample to Army spouses. They examine the influence of several aspects of military service on the employment situation of civilian wives of military men. In terms of geographic mobility, they find that those spouses who move less frequently are more likely to be in the labor force and to find a job (especially one

in which the spouse is able to work full time and/or use the skills that they have on that job). Similarly, the amount of time a spouse is at a given geographic location is positively related to labor force participation, employment (vs. unemployment), full-time work (vs. part-time work), and whether the spouse is able to utilize her skills in her current job. They also find that those spouses who live closer to a population center are more likely to be in the labor force and employed and that those who are stationed overseas are particularly disadvantaged. Having children, especially young children, is associated with lower labor force participation, employment, and full-time work. Education appears to have a particularly strong, positive effect on the likelihood of a wife being in the labor force, being employed full-time, and using her skills in her current job.

The results of these studies largely confirm the results of two government-sponsored studies addressing spousal employment (on which the Schwartz, Wood, and Griffith (1991) article is based). Schwartz (1990), using a sample drawn from the March 1985 CPS, examines the labor force participation, employment, and earnings of civilian wives of military men in comparison with the civilian wives of civilian men. Controlling for a multitude of background factors in a regression analysis, Schwartz finds that the civilian wives of military men are less likely to be in the labor force and, if in the labor force, are less likely to be employed than their counterparts married to civilian men. However, he does not find a statistical difference, once a variety of factors are controlled for, in the hourly wage rates or annual income between the wives of military and civilian men. The author does not imply, though, that the wives of military men are not disadvantaged. In fact, since he controlled for various

military-related factors in his equations (e.g., geographic mobility), the disadvantage of women married to military men is accounted for by those variables. For example, he finds that military wives tend to be younger, have younger children, work part-time instead of full-time, do not live near metropolitan areas, and relocate more often, in comparison to wives of civilian men, all of which are associated negatively with annual income. He also finds that geographic relocations, and, thus, interruptions in work, do not appear to affect hourly wage rates as they do annual income. This implies that it is the time lost in employment due to a move that is most detrimental to civilian wives of military men, as most are able to find work at comparable hourly wages at their new location.

Using data from the 1985 CPS, Schwartz, Griffith, and Wood (1990), essentially duplicate the analysis of Schwartz (1990) in the first part of their analysis, reporting the same findings. In the second section of their report, they focus on Army spouses (i.e., the civilian wives of Army men) and how various Army policy-related variables affect labor force participation, employment, full-time employment, and underemployment. They find that those wives who live inside the continental United States (relative to those who are stationed outside of it), the length of time spent at a given location, and the presence of a spouse employment program are all positively related to labor force participation. Once in the labor force, the only policy-related variable that influences whether or not the wife is employed is the length of time the household has been at that location—the longer the better. Once employed, how long a wife has been at her current location significantly influences whether or not she is in part-time or full-time employment—the longer she is there, the more likely she will be

employed full-time instead of part-time. The length of time a wife is at the same location is also the only policy-related variable that is a significant determinant of underemployment. Those wives who have been present at one location the longest are most likely to be using their skills in their current job.

Only one government report addresses the civilian husbands of military women in addition to the civilian wives of military men. Using data from the 1992 DoD Survey, Stander et al. (1998) find that civilian wives were much more likely to say that they were homemakers (31.2%) and to list homemaking as one of their roles (51.9%) when compared to civilian men (4% and 10.9%, respectively). While 7.7% of civilian wives categorized themselves as unemployed, 15.6% of civilian husbands did. When employed, civilian husbands were much more likely than civilian wives to be employed full time instead of part time. Of those who reported that they were employed full time, almost 70% of both husbands and wives reported that they had been in their current job for less than one year. Examining those who were working in full-time jobs more closely, these authors find gender differences in the degree to which the civilian spouse's job and the military spouse's job interfere with one another. While the majority of civilian spouses felt that their military spouse's job interfered very little or not at all with their employment, 26.2% of civilian wives and 36.7% of civilian husbands felt otherwise. Looking at how the civilian spouse's job interfered with the military spouse's job, 16.5% of civilian wives felt that there was somewhat, a great deal, or complete interference, while 27.6% of civilian husbands felt this way. Given the unemployment rates and the amount of interference civilian husbands experience, it is not surprising that this study also finds that "Civilian

husbands tended to be least satisfied with 'employment opportunities'" (Stander et al. 1998: vii).

Unfortunately, the quantitative results of this study are primarily descriptive in nature and do not control for a variety of employment related characteristics using multivariate techniques. The study does, however, include a qualitative analysis of interviews with civilian spouses that does offer further insight into the impact of geographic mobility on the employment situation of these spouses. One of the most consistent findings in this portion of the study was that prior military experience and exposure to the military environment help spouses adjust to the demands of the military lifestyle (e.g., geographic mobility). As more civilian husbands are likely to have served in the military, or if they have not served, than to have been otherwise exposed to it (e.g., come from military parents), this would appear to give civilian husbands an advantage over civilian wives in military marriages. Those civilian wives who concentrated on raising a family rather than building a career as well as those whose career field was relatively portable appear to have adapted better to the military way of life. For civilian husbands, these authors find that while many husbands may have been reluctant to list homemaker as one of their roles in the quantitative portion of this study, they do tend to take on considerable family responsibilities due to the demands of their wife's military job.

In addition to the results of this study directly related to employment, the study also describes some demographic differences between the civilian wives of military men and the civilian husbands of military women that may have implications for their employment situation. The authors find that, on average, the civilian husbands of

military women are older (and, thus, probably have more work experience) and better educated than the civilian wives of military men (Stander et al. 1998). While the civilian husbands apparently have more human capital than civilian wives, it remains to be seen whether or not they can convert this human capital into employment and earnings and how geographic mobility affects their ability to do so.

Families with a civilian husband and a military wife are also less likely to have children than a family with a civilian wife and a military husband and, if they have children, are more likely to have fewer children (Stander et al. 1998). Thus, the employment of civilian husbands is less likely to be constrained by childcare considerations. Even when children are present in such a relationship, it may be the military wife, not the civilian husband, who takes primary responsibility for arranging childcare. Bourg (1995) reports that despite being in the military, women soldiers are expected to perform those duties traditionally performed by the wife of a military member, including familial duties, such as childcare, as well as participation in community and organizational activities (in addition to their own military duties).

Civilian husbands of military women are also more likely to be married to an officer (rather than an enlisted member) than civilian wives of military men (Stander et al. 1998). This potentially affects employment in several ways. Because officers generally earn more than enlisted personnel, spouses of officers are probably less likely to have to work for reasons of financial need. Scarville (1990: 33-34) reports that "The majority of enlisted men's wives are in nonprofessional positions and most appear to be working for financial reasons... However, the circumstances are quite different for officer[s'] spouses. These wives are more likely to be working for

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intrinsic reasons and are more likely to be in professional and other highly skilled occupations." While enlisted spouses are also known to have higher levels of unemployment that officer spouses (Scarville 1990), it may be that officer spouses are more penalized in their occupations for geographic mobility, especially if their profession is relatively non-transportable or the market for such occupations is relatively slow. Even in a good job market and with transportable skills, such spouses are likely to be penalized for falling outside the ideal worker norm (Williams 2000). Officers' spouses who cannot find a job and do not need to work may choose not to participate in the labor force or may become discouraged workers (e.g., wanting to work but no longer looking for employment) and thus diminish the extent to which they are measured as unemployed. Having access to an officer's higher pay, an officer's spouse may also be less geographically constrained in his or her job search or employment due to access to transportation such as a second car.

Civilian wives of military men and civilian husbands of military women also appear to differ in terms of race/ethnicity. Stander et al. (1998) find that while civilian husbands and civilian wives were almost equally likely to be white (76.2% vs. 78.8%), there were larger differences in the proportion of these groups who were black and Asian. While 13.3% of civilian husbands were black, only 7.7% of civilian wives were. On the other hand, Asian women made up 5.4% of civilian wives and only 2.3% of civilian husbands. Thus, to the extent that these racial groups receive any differential advantages or disadvantages from geographic mobility, gender differences are likely to be increased.

It is unknown whether or not there are gender differences in the use of military spousal employment assistance programs. However, we do know that civilian husbands of military women often exclude themselves or are excluded from participating in military community activities, support groups, and volunteer work (Bourg 1995). The rate of volunteerism for civilian husbands is even less than that of active duty men (Bourg 1995). While participating in volunteer programs and community activities is different from utilizing an employment assistance program, the non-participation of civilian husbands in such programs may be symptomatic of a broader pattern of behavior—trying to become socially invisible to avoid drawing attention to their relatively unique status (Bourg 1995). If this is the case, the use of military-run spouse employment assistant programs by civilian husbands may also be low. Besides this, such programs are likely to be geared more towards civilian wives given their relative numbers in the military.

Unlike spousal employment assistance programs in the civilian sector, which are often non-existent or exist as informal "desk drawer" programs (Hendershott 1995), the Department of Defense (DoD) has had an official spousal employment program since 1985 (GAO 2002), although the exact nature of such a program varies from installation to installation. Programs may range from offering classes on résumé preparation or job interviewing techniques to maintaining a list of contacts at local businesses at which civilian spouses might seek employment. The Navy and Marine Corps have recently partnered with a civilian employment services firm at two installations in order to increase opportunities for spousal employment in the local community (GAO 2002). Current DoD initiatives include fostering partnerships with

private corporations to develop positions with "portable tenure" by which spouses can maintain their tenure by remaining employed with the same company after relocating (GAO 2002). The DoD has also been working with the Department of Labor to ease the problems created by state-level licensing and certification requirements for jobs such as teaching and nursing (GAO 2002). Congress continues to encourage the military to help the civilian spouses of military personnel. According to the GAO (2002: 7), "The National Defense Authorization Act for Fiscal Year 2002 directed the secretary of defense to help spouses access financial, educational, and employment opportunities through existing DOD and other federal government, state, and nongovernmental programs."

In addition to such programs that help spouses obtain employment in the civilian sector, civilian spouses are also given preference for certain federal positions within the commuting area of the installation to which their military spouse is assigned (DoD 1989). While the details of the spousal preference program are complex, it basically states that if a civilian spouse of a military member is among the best qualified candidates for certain federal positions, and a "higher" preference candidate (e.g., someone eligible under the veteran preference program) is not among the "best qualified," than that spouse will be selected for that position (DoD 1989). A spouse can only exercise this preference if they have not already accepted continuing employment with the federal government during a given assignment (e.g., if the civilian spouse has accepted one federal job and better one becomes available, they cannot use spousal preference in competing for the better position) (DoD 1989). The spouse preference program, however, may inadvertently create gender differences in

the employment situation of civilian spouses. This is because civilian male spouses are much more likely to be veterans than civilian female spouses (Stander et al. 1998) and veteran preference trumps spousal preference in most cases in the federal employment hiring process.

Hypotheses

Listed below are the five research questions addressed by this project. Under each question is a hypothesis or set of hypotheses that are drawn from the theoretical perspectives and literature discussed above. These hypotheses address either the impact of geographic mobility more generally or specific gender, race, and class differences. Each of these hypotheses, unless otherwise stated, suggests a relationship between variables that exists net of the effects of other relevant variables. If specific gender, race, or class differences are not hypothesized for a given research question, such differences will be investigated in an exploratory manner as they emerge in my analysis.

Before listing my specific hypotheses, though, it is useful to address more generally the gender, race, and class differences I expect to find. Gender differences I hypothesize below are based largely on the differential work experiences and expectations of men and women in (and out of) the labor force (e.g., Blau, Ferber, and Winkler 1998). Broadly speaking, I suggest that while civilian husbands may move less frequently than civilian wives, they are penalized more for their geographic mobility in terms of employment status and earnings. The limited literature on racial differences in the impact of geographic mobility suggests that minority groups may

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experience difficulties not encountered by white movers. Therefore, I have hypothesized below that minority spouses will experience penalties greater than that of white spouses for their mobility. There is almost no discussion of class differences in the civilian corporate relocation literature, as most corporate movers are similar in class: middle to upper-middle class managers. In the military, class is best represented by the rank of the military member to which the civilian spouse is married. I hypothesize below that those civilian spouses of lower class (i.e., whose military spouse is of more junior rank) are likely to experience less of a penalty for their geographic mobility than those of a higher class. Due to lack of evidence in the preexisting literature, though, most of my analysis along class lines will also be exploratory.

1. Does gender, race, or class affect the likelihood that a civilian spouse will move as a result of their spouse's reassignment?
    a. Gender Differences
        i. The civilian husbands of military women are less likely to move as a result of their spouse's reassignment than are the civilian wives of military men (i.e., when a military member moves, civilian husbands are less likely to follow them to their new assignment than are civilian wives)
        ii. The civilian husbands of military women move less frequently (i.e., have more time, on average, between moves) than the civilian wives of military men

b. Race Differences

    i. Civilian husbands and wives in racial minorities move less frequently (i.e., have more time, on average, between moves) than non-minority husbands and wives

c. Class Differences

    i. Civilian husbands and wives of lower class are more likely to move as a result of their spouse's reassignment than are civilian spouses of higher class (i.e., when a military member moves, civilian spouses of military members of lower rank are more likely to follow them to their new assignment than are civilian spouses of higher ranking military members)

2. Does geographic mobility influence the reasons why spouses seek employment or limit the perceived opportunities for employment?

a. General

    i. Increasing levels of geographic mobility are positively associated with seeking employment for financial need

    ii. Those civilian spouses who move more frequently tend to perceive that they have fewer employment opportunities

3. What are the consequences of geographic mobility in terms of employment status and type of employment?

a. General

    i. Civilian spouses of military personnel with higher levels of geographic mobility are less likely to be employed than those with lower levels

ii. Civilian spouses who move more often are less likely to be employed in full-time jobs than those who move less frequently

iii. Civilian spouses who move more often are less likely to be employed in Federal jobs than those who move less frequently

iv. Civilian spouses who move more often are more likely to be discouraged workers than those who move less frequently

b. Gender Differences

i. Geographic mobility is more costly for civilian husbands than civilian wives in terms of employment status

c. Race Difference

i. Geographic mobility is more costly for racial minorities than for non-minorities in terms of employment status

d. Class Differences

i. Geographic mobility is more costly for those spouses whose military members are more senior in rank than those with more junior spouses in terms of employment status

4. What are the economic consequences of geographic mobility in terms of earnings?

a. General

i. Higher levels of geographic mobility are associated with earnings penalties for civilian spouses

b. Gender Differences

i. Geographic mobility is more costly for civilian husbands than civilian wives in terms of earnings

c. Race Differences

    i. Geographic mobility is more costly for racial minorities than for non-minorities

d. Class Differences

    i. Geographic mobility is more costly for those spouses whose military members are more senior in rank than those with more junior spouses

5. Does geographic mobility have implications for the degree to which the jobs of the civilian and military spouses interfere with one another?

a. General

    i. High levels of geographic mobility are associated with more interference between the job of the civilian spouse and that of the soldier

CHAPTER III: METHODS AND PROCEDURES

Data and Initial Sample

For this dissertation, I perform a secondary analysis of data from the 1992 Department of Defense Surveys of Officers and Enlisted Personnel and Their Spouses. The 1992 DoD survey consists of twelve modules, each with its own sample. There are three broad categories of modules: military members, spouses of military members, and couples (i.e., military members and their spouses). Within each category, there are four specific modules: a longitudinal sample, an enlisted recruiter sample, a guard/reserve sample, and a regular member sample (see Table 3.1) (Westat 1993). Because of sampling/weighting differences between the modules, as well as considering the populations the various modules represent, I focus my analysis solely on the module consisting of spouses of regular members.

Table 3.1: Modules in the 1992 DoD Survey

	Members	Spouses	Couples
Longitudinal	Members Longitudinal	Spouses Longitudinal	Couples Longitudinal
Enlisted Recruiter	Members Enlisted Recruiter	Spouses Enlisted Recruiter	Couples Enlisted Recruiter
Guard/Reserve	Members Guard/Reserve	Spouses Guard/Reserve	Couples Guard/Reserve
Regular Member	Members Regular Members	Spouses Regular Members	Couples Regular Members

Spouses of regular military members were sampled based on their associated

military member. That is, if a married military member in the regular member

population was sampled (marital status being determined by data from the Defense

Enrollment Eligibility Reporting System (DEERS)), his or her husband or wife was

sent the spouse form of the survey (Westat 1993). The population from which the

regular military members module was drawn was defined as "active-duty officers and

enlisted personnel with 4 or more months of service, who were stationed in the U.S. or

overseas and who were neither sampled in 1985 nor enlisted recruiters" (Westat 1993:

2). The regular member sample was stratified along three dimensions: branch of

service (i.e., Army, Navy, Air Force, Marines), officer/enlisted status, and gender

(OASD(P&R) 1993; Westat 1993). According to Westat (1993: 2), "A total of 5,000

members were [randomly] sampled from each of the resulting 16 stratum." There

were, however two exceptions: women Marine Corps officers, who numbered less

than 5,000 in the population (there were 355 women Marine officers, of which 346

were selected into the sample) and Navy enlisted men, of whom only 4,999 members

were selected (no explanation was given for this, but it is assumed that there was an

error in one of the sampled member's data, such as a duplicate social security number,

that did not allow that individual to be included in the sample).

This sampling strategy, as well as differential survey response rates of the

spouses within and between strata, necessitates weighting the spouse data to ensure

that the statistics derived from this sample best estimate the actual population

parameters. Researchers at Westat (1993) developed such a weighting scheme using a

three-stage process. The first stage was to develop base weights according to the

sampling probabilities associated with the strata from which the sample was drawn. Because of the way the spouses were selected into the sample (i.e., by the selection of their associated military member), the base weights of the spouses of regular military members equals those of their associated regular military member. For regular military members and, thus, their spouses, in strata whose population was at least 5,000, their base weights were calculated by dividing the number in the regular member population within that strata by 5,000. Strata with population counts of less than 5,000 (i.e., Marine Corps women officers) were assigned a base weight of 1.

In the second stage of the weighting process, base weights were adjusted for non-response problems (Westat 1993). While the overall response rate for the regular member spouse survey was 39% (of the 43,038 eligible spouses in the sample, 16,699 completed the survey), the response rate varied greatly between strata (Westat 1993). For example, wives of Air Force officers had a response rate of 62% while the husbands of Army enlisted women responded at a rate of only 9% (i.e., 244 of 2,656 eligible respondents) (Westat 1993). Assuming that the respondents within a strata were representative of the non-respondents, the base weights were then adjusted by a factor calculated by dividing the eligible spouses in each strata by the number of responding spouses in that strata (Westat 1993).

The third and final step of the weighting procedure consisted of a raking process that adjusted the nonresponse-adjusted weights by forcing those weights to "aggregate to known populations totals along various margins" (Westat 1993: 5). In other words, the sampling weights were adjusted again to make the sample more representative based on a larger number of characteristics of a known population.

This raking (or ratio adjustment) was accomplished along two dimensions and based on a comparison of the military members associated with spouses in this module's sample to certain characteristics of the known population of married regular military members. Data for this known population were derived from the Active Duty Military Master and Loss File (ADMM&L) and DEERS. The first dimension along which the regular member spouse data were raked consisted of adjustments for branch of service, officer/enlisted status, and gender. The second dimension along which these data were raked consisted of pay grade and race. This raking produced a final weighting variable that will be used to weight my sample data.

The spouse form of the survey contains 82 questions covering a broad spectrum of topics including basic demographic information, mobility, work experience, family composition, satisfaction with various military services, and the impact of Operation Desert Shield/Storm (i.e., the Persian Gulf War). In terms of geographic mobility, this data set provides information on the number of moves the spouse has made due to the military member's change of station, the number of changes of station the military member has made, how many months the spouse has been at his or her current location, and number of years spent at an overseas location. In addition to basic information about the spouse's current employment status, data are also available concerning the length of time the spouse has been employed in his/her current job, the number of weeks he/she worked in 1991, the amount earned in 1991, part-time/full-time status, whether or not he/she is employed in a Federal job, why he/she chose to work, and why he/she left his/her last job. Spouses also rated their current geographic location in terms of the opportunities they perceived for

employment, problems they have encountered in finding work, and the degree to which the spouse's job and the military member's job interfere with one another.

This module of the 1992 DoD survey data contains information on 14,874 currently married (not separated) civilian (i.e., not currently on active duty) spouses of regular military members who have data on gender, race, and the military rank of their spouse. Of these spouses, 12,275 are civilian wives and 2,599 are civilian husbands. This is my initial sample. Because of missing data for some individuals on some questions, the exact sample size in each area of analysis will be slightly different.

Preliminary analysis was conducted on this initial sample of civilian spouses to determine the appropriateness of various racial/ethnic categories for this research. The focus of this analysis was on the Hispanic members of this sample and the viability of including them in my study. Several key variables (e.g., number of children, years married, number of moves made due to their military members' permanent change of station, number of weeks worked in 1991, and earnings in 1991) were analyzed using a combination of ANOVA and regression techniques.

The primary finding of this analysis was that Hispanics are not a homogeneous group—their performance on various measures is a function of their race (i.e., Black, White, Asian, American Indian/Native Alaskan, Other) as well as the country/region to which their Hispanic ethnicity is linked (i.e., Mexico, Puerto Rico, Cuba, Central/South America, other Spanish/Hispanic). For example, in a regression analysis of the natural logarithm of the earnings variable, if Hispanics were grouped using a single indicator variable (i.e., Hispanic or non-Hispanic), controlling for other factors related to earnings (e.g., age, education, gender, race, etc.), Hispanic origin was

not significantly related to earnings. However, if Hispanics were allowed to vary by their more specific ethnicity (e.g., Cuban Hispanics, Puerto Rican Hispanics, etc.), some Hispanic groups differed significantly from non-Hispanic spouses, while others did not. When Hispanics were analyzed separately from the rest of the sample, I also found that Hispanics of various specific ethnicities differed significantly from one another, while also differing by race. However, analyzing Hispanics by both race and country/region, or by race alone or country/region alone is not possible due to the small number of Hispanics in the sample (e.g., there are only 135 total male Hispanics in my initial sample: 45 Mexican, 28 Puerto Rican, 9 Cuban, 16 South/Central American, and 37 "others"). Because of the heterogeneity of Hispanics and, thus, the inappropriateness of analyzing Hispanics as a single group, as well as the small number of Hispanics within each Hispanic subgroup, I decided to exclude Hispanics altogether from my analysis. Since all Hispanics have been excluded from this sample (i.e., only non-Hispanics remain), the "non-Hispanic" qualifier will be omitted in the remainder of this dissertation.

In addition to excluding Hispanics, I have also elected to exclude non-Hispanics in two other racial categories: American Indians/Alaskan Natives (28 men and 59 women in the initial sample) and those of "Other" race (45 men and 127 women in the initial sample). This "Other" category includes non-Hispanic individuals who chose to write in their own racial category; however, no information is available as to what respondents wrote in. Not only is the number of "American Indians/Alaskan Natives" and "Others" in the sample too small for appropriate analysis, the category of "Other" itself is theoretically questionable given the lack of

information about the racial categories written in by the respondents and the potentially heterogeneous composition of the group.

Table 3.2 shows the non-weighted frequency counts of those remaining in the sample by sex, race, and officer/enlisted status of their spouse. Final weights were scaled so that the sum of weights equaled the total non-weighted sample count in Table 3.2. Note that the non-weighted count of individuals in the sample indicates that there is a much smaller percentage of enlisted personnel in this sample (31%) than one would expect given that approximately 84% of active duty military members are enlisted (MFRC 2000). When weighted, however, the enlisted members make up approximately 80% of the sample, more closely approximating known demographics.

Table 3.2: Civilian Spouses in Sample by Sex, Race, and Officer/Enlisted Status of Their Military Spouse (non-weighted counts)

		White	Black	Asian	Total
Male	Enlisted	536	164	19	719
	Officer	1482	145	45	1672
	Total	2018	309	64	2391
Female	Enlisted	2779	471	310	3560
	Officer	7228	298	317	7843
	Total	10007	769	627	11403
Total	Enlisted	3315	635	329	4279
	Officer	8710	443	362	9515
	Total	12025	1078	691	13794

While this data set is well-suited for my study, it is possible that some of my results may be biased due to selection bias. This will probably be most significant for my results pertaining to the interference between the military and civilian spouses' jobs. That is, families who have experienced the most conflict between the military

and civilian spouses' jobs may have already left the military or gotten a divorce and, thus, would not be included in the data set. Indeed, South and Lloyd (1995) find that living in an area characterized by high levels of geographic mobility increases the risk of marital instability. Those families who remain in the military may have been less impacted by the demands of the military lifestyle or at least more able to adapt to them. Furthermore, those who remain in the military who experience the most significant time demands may be less likely to respond to a survey.

Another weakness of this data set is its lack of information about the specific geographic location at which the spouses reside. Booth (2000) and Booth et al. (2000) find that local labor markets with a large military presence may structurally disadvantage women in terms of employment opportunities and earnings. If the gender of a soldier is related to the specific base or sets of bases at which he or she has been or will be stationed, and thus the local labor market in which his or her civilian spouse must find employment, some of the gender differences found in this study may be due to unmeasured differences in local labor markets. However, when the influence of geographic mobility on the various dependent variables is estimated separately for each gender (as I have done in this analysis), any gender differences in labor market distribution are effectively controlled. The relative influence of geographic mobility for men and women can then be compared.

Despite these weaknesses, this data set also has several strengths. First, these data contain information on multiple dimensions of geographic mobility. In contrast to most studies of geographic mobility and tied migration, which often limit their analysis to the single dimension of whether or not an individual has moved, I am able

to study the influence of the number of moves spouses have made, how long, on average, they have experienced between moves, how much time they have been at their current location, and how many years they have lived outside the continental United States on each aspect of their employment situation. Indeed, it will be demonstrated in my analysis that each of these dimensions of geographic mobility have a unique relationship with the employment situation of civilian spouses of military personnel.

A second significant strength of the data set is the fact that it contains information on an individual's gender, race, and class (as defined by the rank of the military member to whom the civilian spouse is married); and, more importantly, has a sample that is sufficient to analyze the influence of geographic mobility on the employment of spouses of these different genders, races, and social classes. The current tied migration literature has almost exclusively focused on White women—neglecting men, racial minorities, and the consideration of social class altogether. Thus, these data allow a relatively large hole in our knowledge about tied migration to be filled.

Analytical Approach

I present my analysis in chapters IV through IX. Chapter IV describes in some detail the various background characteristics of my sample to include age and education, as well as certain family and military-related characteristics. Comparisons are made between civilian husbands and wives, between different racial groups, and between officers and enlisted personnel. Such a descriptive analysis is important for

at least two reasons: it not only provides a context in which the results of more detailed analysis can be interpreted, but fills a gap in the military family literature which has done little to differentiate spouses, even descriptively, by gender, race, and class.

Chapter V addresses the degree to which civilian spouses of military members are "tied" to their military members and attempts to answer my first research question. The dependent variables examined in this chapter measure the proportion of moves made by the military member that the civilian spouse has made, the frequency with which civilian spouses move, and the number of moves they have made. Chapter VI explores the influence of mobility on the perception of job opportunities and reasons for employment, addressing the second research question and its related hypotheses. The degree to which the need of money for basic family expenses contributed to the decision to work, how much of a problem finding civilian employment was after moving to their current location, and their satisfaction with job opportunities more broadly within the context of the military lifestyle will be the three dependent variables analyzed.

Chapter VII addresses the influence of geographic mobility on employment status and the types of employment undertaken by the civilian spouses of military members (e.g., part/full time, Federal/non-Federal employment). This chapter directly addresses my third research question and its related hypotheses. Within this chapter, I analyze whether or not the civilian spouses are employed, unemployed, or not in the labor force, and, if employed, how long they have been working for their current employer and how likely they are to be employed full-time or to be employed by the

Federal government. I will also address how geographic mobility affects whether or not an individual is a discouraged worker (defined as someone who is not in the labor force due to the fact that they are not looking for work, although they would like to work).

Chapter VIII examines the economic consequences of geographic mobility. More specifically, I analyze the influence of geographic mobility on the earnings from civilian employment in 1991. This chapter addresses my fourth research question and related hypotheses. Chapter IX, addressing my fifth research question, examines the potential conflicts between the civilian employment of spouses and the military jobs of their soldier husbands and wives. The degree to which the military member's job and the civilian spouse's job interfere with one another and the degree to which this interference is affected by geographic mobility will be analyzed.

Within these chapters I use a combination of descriptive and multivariate techniques: mean comparisons, ordinary least squares (OLS) regression, and logistic regression (for dichotomous and ordinal dependent variables). The statistical software packages used are SAS (version 6.12) and SPSS (version 10.0). For mean comparisons, I use the General Linear Model (GLM) procedure in SPSS, which allows the use of weighted data and is appropriate for unbalanced designs (i.e., having cells of unequal size), to calculate multi-factor ANOVAs. Post-hoc pair-wise comparisons using the Tukey test are used to compare the means of various groups. This method is superior to using several t-tests to make such multiple comparisons due to the Tukey test's ability to control the type I error rate. Using multiple t-tests in this situation would increase the likelihood that a significant difference would be detected that was

due only to random chance/error (i.e., an increased risk of rejecting the null hypothesis of no difference, when, in fact, it is true)[*]. While the results of these ANOVAs are not explicitly presented or generally discussed in this paper, differences between subgroups that are significant at the 0.05 level are noted in the various mean and standard deviation tables throughout the analysis. Primary emphasis is, instead, given to the discussion of the results of multivariate regression, which show gender, race, and class differences net of the influence of several factors associated with each dependent variable.

For my regression analysis I use the following SAS procedures: PROC REG for OLS regression and PROC LOGISTIC/PROC CATMOD for the logistic regression. In my regression analysis I first estimate one equation which includes all civilian spouses in my sample. By looking at the coefficients for the sex, race, class (military paygrade), and geographic mobility variables in this equation, I am able to draw some conclusions about these factors net of the other variables in the equation. I also estimate separate regression models of men (civilian husbands) and women (civilian wives); Whites, Blacks, and Asians; and the spouses of enlisted personnel and the spouses of officers so that the various coefficients are not constrained to be equal for these various subgroups. To test the differences between the coefficients of

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[*] Even when comparing only two means, use of t-test procedures in either SAS 6.12 or SPSS 10.0 is not possible, as these procedures do not allow for the use of weighted data. Using a main effects-only ANOVA in this manner is the equivalent of running a weighted OLS regression model using the factors as independent variables. The F statistic for each factor calculated in the ANOVA is equivalent to the square of the t statistic calculated in regression and produces identical levels of significance. The advantage of the ANOVA in this case is that multiple categories can be compared to one another (in post-hoc testing) instead of to a single reference group, as in regression.

civilian husbands and wives, Whites and both minority groups, and the spouses of enlisted personnel and the spouses of officers, I also estimate three interaction models (i.e., one for gender, one for race, and one for class) which interacts sex, race, and class, each in their respective models, with each of the other variables in the equation. This technique allows the exploration of how the effects of geographic mobility and other variables potentially differ by gender, race, and class. While the interaction models are not explicitly presented in my analysis, their results are discussed and annotated in the appropriate tables.

Variables

The following list of variables that will be used in my analysis provides more information as to how they were constructed. The items on the 1992 DoD Survey of Military Spouses used in their construction are indicated following the description of each variable using the following notation: {#}. See Appendix A for the exact wording of these questions:

- Geographic Mobility
    - Number of Moves [MOVES]: number of times civilian spouse has moved due to the military member's PCS during current marriage (topcode = 10) {9}
    - Tied Migration [TIEDMOVE] – The proportion of moves made by the military member due to his/her permanent change of station that the civilian spouse has made: calculated by dividing the number of moves the military member to which the civilian spouse is married has made during

their marriage by the number of moves the civilian spouse has made during their marriage. Because division by zero is not possible, spouses must have made at least 1 move (continuous) {8, 9}[*]

- Time Between Moves [MOVETIME] – The average length of time a civilian spouse experiences between moves calculated by dividing the length of marriage by the number of moves the spouse has made. Because division by zero is not possible, spouses must have made at least 1 move. Those spouse who had been married less than one full year were assigned a value of 0.5 years for their length of marriage (continuous) {9, 55}[*]

- Overseas [OVERSEAS]: Number of years spent at same overseas location as military member (topcode = 20) {10}

- Time on Station [TOS]: a continuous variable that indicates the length of time (in years) that the civilian spouse has been living at his/her present geographical location {2}

- Employment Reasons and Job Opportunity

  - Work for Need [WRKNEED] – The degree to which the need of money for basic family expenses contributed to the decision of employed spouses to work (ordinal: none, minor, moderate, major contribution) {70}

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[*] The average time between moves and the tied migration rates for spouses who have not moved are unable to be calculated as they would require division by zero. Therefore, because of the way in which these variables are calculated, analysis using these variables is, by default, limited to those spouses who have made at least one move. Thus, 1,779 spouses (the vast majority of whom are spouses of the most junior enlisted and officer personnel) are excluded from such analysis due to this limitation.

- Job Search Problem [SRCHPROB] – How much of a problem was finding civilian employment after move to present location? (ordinal: none, slight, somewhat, severe) {11}

- Dissatisfaction with Job Opportunities [SATJOBOP] – Dissatisfaction with job opportunities within context of military way of life (ordinal: very satisfied, satisfied, neither, dissatisfied, very dissatisfied) {79}

• Employment Status and Type (see Chapter VII for a more detailed description of how individuals were categorized)

- Employed [EMPLOYED] – Whether or not employed (dichotomous) {65}

- Unemployed [UNEMPLOY] – Whether or not unemployed (dichotomous) {65}

- Not in Labor Force [NILF] – Whether or not in the labor force (dichotomous) {65}

- Full Time [FULLTIME] – Whether or not working full time in a Federal or other civilian job (dichotomous) {65}

- Federal [FEDERAL] – Whether or not working in a Federal job (full-time or part-time) (dichotomous) {65}

- Length of Employment [TIMEEMP]: Number of months employed for present employer if currently employed {66}

- Discouraged Worker [DWORKER] – Whether or not individual is a discouraged worker defined as wanting to work but not looking for a job (dichotomous) {65, 72}

- Earnings
  - Log of 1991 Earnings [LNEARN] – Natural logarithm of the pretax earnings from civilian employment in 1991 for those with positive earnings who worked at least 1 week in 1991 (continuous: topcode = 100,000) {74}
- Job Interference (see chapter on job interference for a more detailed description of how this variable was constructed)
  - Interference [INTERSC]– Degree to which an employed civilian spouse's job and that of his or her military member interfere with one another (ordinal: no interference, some interference, most interference) {67, 68}
- Gender, Race, and Class
  - Sex [SEX]: sex of civilian spouse - 0 if male, 1 if female {46}
  - Race/ethnicity: this is a set of five dummy variables (WHITE is excluded group in regression)
    - White [WHITE]: 1 if civilian spouse is White, Non-Hispanic, 0 if otherwise {50, 51}
    - Black [BLACK]: 1 if civilian spouse is Black, Non-Hispanic, 0 if otherwise {50, 51}
    - Asian [ASIAN]: 1 if Asian/Pacific Islander, Non-Hispanic, 0 if otherwise {50, 51}
  - Military Rank of Service Member: set of five dummy variables {Not a survey item—calculated from weighting data}. No data on rank more detailed than the categories below is given in this data set:

- E1 – E4 [E1E4]: 1 if service member is in pay grades E1-E4, 0 if not

- E5 – E6 [E5E6]: 1 if service member is in pay grades E5-E6, 0 if not

- E7 – E9 [E7E9]: 1 if service member is in pay grades E7-E9, 0 if not

- O1 – O3 [O1O3]: 1 if service member is in pay grades O1-O3 or W1-W3, 0 if not

- O4+ [O4PLUS]: 1 if service member is in pay grades O4 or greater or W4 or greater, 0 if not (excluded)

  - Officer [OFFICER]: 1 if service member is an officer, 0 if otherwise {from rank data}

- Human Capital Variables

  - Age [AGE]: age of civilian spouse at last birthday (a proxy for potential labor market experience) {47}

  - Age^2 [AGESQ]: square of AGE {47}

  - Education: a set of five dummy variables that refer to the education level of the civilian spouse

    - Less than High School [ED_LOW]: 1 if less than high school and no GED, 0 if otherwise {52}

    - High School [ED_HS]: 1 if high school or GED, 0 if otherwise (excluded) {52}

- Some College [ED_SCOLL]: 1 if some college, 2-yr degree, or "other" degree (not BA/BS, MA/MS, PhD/MD/LLB), 0 if otherwise {52}

- College Degree [ED_BABS]: 1 if 4-yr college degree (BA/BS), 0 if otherwise {52}

- Graduate School [ED_GRAD]: 1 if some graduate school or graduate degree (MA/MS or PhD/MD/LLB), 0 if otherwise {52}

  – Weeks Worked in 1991 [WKSWRK91]: Number of weeks worked for pay at a civilian job in 1991 (topcode = 52) {73}

- Family Variables

  – Children [MINORS]: the total number of minor dependents living in the same household as the civilian spouse {58}

  – Child < 6 [CHILD6]: 1 if there is a dependent child less than six living in the same household as the civilian spouse, 0 if otherwise {58}

  – Remarried [REMARRY]: 1 if civilian spouse had a previous marriage, 0 if civilian spouse married for the first time {53}

  – Born Overseas [BORN]: 1 if civilian spouse born overseas to non-military parents, 0 if otherwise {48}

- Other Military Related Variables

  – Employment Services [EMPSERV]: 1 if used military-run spouse employment services at present location, 0 if not {37}

- Veteran [VETERAN]: 1 if civilian spouse has previously served in the military (i.e., is either retired or separated from military service), 0 if otherwise {13}

- Reserves [RESERVES]: 1 if civilian spouse currently serving in a reserve/guard unit, 0 if not {13, 65}

- Branch of Service: set of four dummy variables {Not a survey item— calculated from weighting data}

  - Army [ARMY]: 1 if service member is in the Army, 0 if not (excluded)

  - Navy [NAVY]: 1 if service member is in the Navy, 0 if not

  - Air Force [AIRFORCE]: 1 if service member is in the Air Force, 0 if not

  - Marines [MARINES]: 1 if service member is in the Marines, 0 if not

CHAPTER IV: DESCRIPTION OF BACKGROUND CHARACTERISTICS

The civilian spouses of military members are not a homogenous group. They differ significantly across many characteristics, several of which may significantly influence their employment situation and how it is affected by geographic mobility. The purpose of this chapter, then, is to explore some of the differences in selected background characteristics of these spouses by gender, race, and class. I specifically examine the following characteristics: age, education, number of years in current marriage, whether or not the spouse has been married previously, how many children are present, and whether or not there is a child less than 6 in the spouse's residence. I also examine several military-related variables such as whether or not the civilian spouse is a veteran, whether or not the civilian spouse is currently serving in the Guard or Reserves, the pay grade of the military member to whom they are married, and the branch of the armed forces in which that member serves.

Age and Education

Table 4.1 shows the mean age of these civilian spouses by sex, race, and officer/enlisted status of their military member. On average, these spouses are 30.4 years old. Men are significantly older than women (32.9 versus 30.3) and officers' spouses are significantly older than the spouses of enlisted personnel (34.9 versus 29.3). The mean ages of spouses in each racial group were also significantly different from one another with Asians being the oldest (32.7), Blacks the youngest (30.0), and

Table 4.1: Mean Age and Education by Sex, Race, and Class

Percentage of Spouses Whose Highest Education Level is:

	Age[abcde]		< High School[abcde]		High School[ade]		Some College[bcde]		College Degree[bcde]		Graduate School[abcde]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex												
Men	32.9	5.3	2.6	9.7	31.9	28.6	43.4	30.4	10.7	18.9	11.5	19.6
Women	30.3	7.9	5.1	23.3	35.2	50.6	39.8	51.9	13.0	35.6	6.9	26.9
Race												
White	30.4	7.1	4.3	18.8	34.9	44.3	39.9	45.5	13.1	31.4	7.8	24.9
Black	30.0	10.2	2.9	25.3	36.4	73.0	46.3	75.6	8.1	41.4	6.3	36.9
Asian	32.7	9.8	17.6	43.1	31.5	52.6	25.1	49.1	22.3	47.1	3.6	21.0
Class												
Enlisted	29.3	11.5	5.9	37.8	41.0	79.1	41.6	79.3	8.4	44.6	3.2	28.2
Officer	34.9	4.0	1.1	5.5	10.6	16.5	34.0	25.3	30.7	24.7	23.6	22.7
Total	30.4	7.5	4.9	21.5	35.0	47.6	40.1	48.9	12.8	33.3	7.2	25.8

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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Whites in the middle (30.4). The difference between Black and White spouses though, is largely due to the difference between the differential distribution of Black and White spouses by the officer/enlisted status of their military member (the same cannot be said of the difference between Asian spouses and Black and White spouses). In an OLS regression model (not shown), using age as the dependent variable while controlling for sex and class, the difference between Black and White spouses was reversed, with Black spouses being almost half a year older than White spouses.

In terms of education, marked differences by sex, race, and class are also evident (Table 4.1). Civilian husbands of military women are generally better educated than civilian wives of military men. Civilian husbands are less likely than civilian wives to be in the lowest two educational categories (having a high school diploma, GED, or less) (34.5% or men and 40.3% of women) and more likely to have a graduate education (11.5% of men and 6.9% of women). However, this sex difference in graduate education is most significant among the spouses of officers. In further analysis (not shown), I find that the male and female spouses of enlisted personnel do not differ significantly from one another in terms of the proportion of each that fall into the highest education category (4.7% of enlisted husbands and 3.1% of enlisted wives), while sex differences are significant among the spouses of officers, with a higher proportion of officers' husbands (41%) having a graduate education than officers' wives (22.5%). This significant sex by class interaction highlights the more general finding that the spouses of officers tend to be much better educated than the spouses of enlisted personnel, having a significantly higher percentage of spouses who have completed a four-year college degree and/or at least some graduate school.

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Overall, 11.6% of enlisted spouses have earned at least a four-year degree, while 54.3% of the spouses of officers have.

In terms of race, Asians and Whites generally tended to have the highest levels of education and Blacks the lowest. For example, 25.9% of Asian spouses and 20.9% of White spouses had completed a four-year college degree and/or at least some graduate school, while only 14.4% of Black spouses had done so. The exception to this ordering of racial groups is with Asian women, particularly those born overseas, who were especially likely to have not earned their high school diploma or GED. Additional analysis (not shown) indicated that 20% of those Asian women born outside the U.S. to non-military parents fell into the lowest educational category, while only 3.5% of Asian women born in the U.S. or to military parents outside the U.S. did. Eighty-seven percent of Asian wives in this sample were born overseas to non-military parents. Interestingly, while more than half of the Asian husbands were also born outside the U.S. to non-military parents, place of birth does not appear to be an important factor in determining whether or not such spouses are in the lowest education category. Thus, there appears to be a greater likelihood of military men marrying Asian women who are not high school graduates, while military women who marry Asian men do not choose spouses less educated than themselves.

Family-Related Variables

Sex, race, and class differences are also evident when examining several family-related variables (Table 4.2). Comparing the mean number of years married

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Table 4.2: Family-Related Variables by Sex, Race, and Class

	Years Married[a][b][c][d][e]		Percentage Remarried[a][b][c][e]		Number of Children[a][b][c][e]		Percentage with Child < 6[a][b][c][d][e]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex								
Men	6.2	3.1	28.0	27.6	1.1	0.6	41.9	30.3
Women	7.7	6.8	16.6	39.5	1.4	1.2	46.5	53.0
Race								
White	7.7	6.0	19.0	36.5	1.3	1.0	45.1	46.3
Black	6.9	8.5	12.4	50.1	1.5	1.7	52.0	75.9
Asian	8.4	7.3	11.3	35.9	1.5	1.2	42.7	56.2
Class								
Enlisted	6.8	9.2	18.1	61.9	1.4	1.8	48.3	80.4
Officer	10.9	4.0	14.2	18.7	1.5	0.6	37.8	25.9
Total	7.6	6.3	17.3	37.8	1.4	1.1	46.2	49.9

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

for the various subgroups, I find that all three (i.e., sex, race, and class) are influential. Civilian wives have, on average, been married longer than civilian husbands (7.7 versus 6.2 years) and the spouses of officers have been married longer than the spouses of enlisted personnel (10.9 versus 6.8 years). All racial categories also differ significantly from one another with Asians being married the longest (8.4 years), followed by Whites (7.7 years) and Blacks (6.9 years).

While the difference in years married is strongly related to age differences, especially between racial categories and between the spouses of officers and enlisted personnel, this variable can also be influenced by whether or not the spouse is in his/her first marriage. Men are significantly more likely to be remarried than are women (28% versus 16.6%) and spouses of enlisted personnel are more likely to be remarried than the spouses of officers (18.1% versus 14.2%). Whites (19%) were more likely to be remarried than Blacks (12.4%) and Asians (11.3%), but Blacks and Asians did not differ significantly from one another.

The average number of children these civilian spouses have in their household also varies by sex, race, and class. The pattern of results found in this analysis conform to the patterns found in other studies (see, for example LaVange 1986 and OASD(P&R) 1993). Civilian wives have more children than civilian husbands (1.4 versus 1.1) and spouses of officers have more children than spouses of enlisted personnel (1.5 versus 1.4). In terms of racial differences, White spouses (1.3) had significantly fewer children than either Black (1.5) or Asian (1.5) spouses, although Asians and Blacks did not differ significantly from one another.

Whether or not there is child under six years old in the spouses' household is another aspect of the family which varies by sex, race, and class. Overall, just over 46% of all spouses have young children at home, but women are significantly more likely to have them than are men (46.5% versus 41.9%). There is also a significant difference between the spouses of officers and the spouses of enlisted personnel, where the spouses of enlisted personnel are much more likely to have such a young child (48.3% versus 37.8%). In addition, a significantly larger proportion of Black spouses (52%) than White (45.1%) or Asian (42.7%) spouses had children less than six years old. Whites and Asians did not differ significantly from one another.

Military-Related Variables

Sex, race, and class also have an important relationship with military-related characteristics of these spouses. Looking at the percentage of spouses in various groups married to the various military paygrades (Table 4.3), reveals several sex and race differences. For example, a significantly higher proportion of men than women are married to military members in the E1 to E4 paygrade range (35.3% versus 28.1%), while a significantly lower proportion of men than women are married to military members in the E7 – E9 range (7.9% versus 14.1%). There were no other significant sex effects for any of the other paygrade ranges. However, race had a significant affect at every paygrade level. At the E1 – E4 level, significant differences were found between all racial groups with Blacks having the highest proportion in this group (34.5%), followed by Whites (28.3%) and Asians (15.5%). For the E5 – E6

Table 4.3: Percentage of Civilian Spouses with Military Members in Each Paygrade by Sex and Race

	E1-E4[abcd]		E5-E6[bc]		E7-E9[acd]		O1-O3[bcd]		O4+[bc]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex										
Men	35.3	29.4	38.2	29.8	7.9	16.5	12.1	20.1	6.4	15.1
Women	28.1	47.8	38.0	51.6	14.1	37.0	11.1	33.4	8.7	30.0
Race										
White	28.3	41.9	35.4	44.5	12.8	31.1	13.1	31.4	10.4	28.5
Black	34.5	72.2	45.7	75.7	13.0	51.1	4.5	31.6	2.3	22.7
Asian	15.5	41.1	46.5	56.6	26.2	49.9	7.8	30.5	4.0	22.2
Total	28.5	45.2	38.0	48.5	13.7	34.4	11.2	31.5	8.6	28.0

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians

paygrades, both Black (45.7%) and Asian (46.5%) civilian spouses were more likely to be married to a military member in this category than Whites (35.4%), but did not differ significantly from each other. A higher proportion of Asians (26.2%) are married to military members in the E7 – E9 range than both Whites (12.8%) and Blacks (13%).

Moving into the officer ranks, significant differences were found between all racial groups in the proportion married to military members in the O1 – O3 paygrades. Whites had the highest proportion at 13.1%, while Asians had 7.8% and Blacks had 4.5%. Looking at spouses married to those in the most senior paygrades, significant differences were found between Whites, who had the highest proportion at 10.4%, and both Asians (4%) and Blacks (2.3%) (who did not differ significantly from one another).

The distribution of the ranks of the military members to which these civilian spouses are married by race mirrors the distribution of rank by race in the active duty force. Minorities tend to be much more concentrated in the enlisted ranks while the officer ranks remain the relatively exclusive province of Whites (MFRC 2000). Black soldiers in general, and especially Black women, have traditionally been over-represented in the enlisted ranks and, at least in the Army, are more likely to complete their initial term of service than Whites and are more likely to reenlist after that term of service (Moskos and Butler 1993). Thus, Blacks continue to be overrepresented amongst mid-level and more senior enlisted personnel (Moskos and Butler 1993).

Besides the rank of the spouse to whom these civilian spouses are married, gender, race, and class differences can be found in other military-related variables

(Table 4.4). Examining the veteran status of these civilian spouses, I find extremely large and significant sex differences. While 69.3% of civilian husbands are veterans, only 9.6% of civilian wives are. There are also significant differences between the spouses of officers and those of enlisted personnel: a higher proportion of civilian spouses of enlisted personnel are veterans than the spouses of officers (14% versus 11.6%). Race is also significantly to veteran status, as Black spouses were mostly likely to be veterans (17.2%) followed by Whites (13.5%) and Asians (only 3.7%).

Whether or not the civilian spouse is currently serving in a Reserve or National Guard unit is also associated with sex, race, and class. As with veteran status, sex differences are relatively large, with civilian husbands being much more likely to be serving in the Guard/Reserves than civilian wives (12.6% versus 1.5%). Class differences were small but significant, with officers' spouses being slightly more likely to be serving in a Guard/Reserve unit than spouses of enlisted personnel (2.7%versus 2.1%). Race, overall, however, did not have a significant relationship with Guard/Reserve status.

Looking at the branch of service in which the military members married to these civilian spouses serve, I again find sex, race, and class play an important role. For example, civilian wives are more likely than civilian husbands to be married to a military member in the Marine Corps (8.1% versus 3.4%), and less likely to be married to someone in the Air Force (29.7% versus 34.7%). This pattern is directly related to the gender distribution of active duty members in the various branches of service, as the Marine Corps has the lowest percentage of active duty women in their ranks (6%) while the Air Force has the highest (18.8%) (MFRC 2000).

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Table 4.4: Other Military-Related Variables by Sex, Race, and Class

| | Veteran[abcde] | | Guard/Reserves[ae] | | Branch of Service | | | | | | | |
| | | | | | Army[bcde] | | Navy[bcde] | | Air Force[abde] | | Marines[ae] | |
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex												
Men	69.3	28.3	12.6	20.4	38.8	29.9	23.1	25.9	34.7	29.2	3.4	11.1
Women	9.6	31.3	1.5	13.0	35.6	50.9	26.6	47.0	29.7	48.6	8.1	29.0
Race												
White	13.5	31.8	2.3	13.9	31.6	43.3	27.3	41.5	33.0	43.8	8.0	25.2
Black	17.2	57.2	2.6	24.1	57.0	75.2	18.7	59.3	17.0	57.1	7.2	39.3
Asian	3.7	21.4	0.7	9.7	26.1	49.9	36.7	54.7	30.6	52.3	6.6	28.2
Class												
Enlisted	14.0	55.8	2.1	23.2	35.8	77.1	27.2	71.6	28.8	72.9	8.2	44.1
Officer	11.6	17.1	2.7	8.7	36.0	25.7	23.1	22.5	34.8	25.5	6.1	12.8
Total	13.5	34.2	2.2	14.8	35.9	48.0	26.4	44.1	30.0	45.8	7.8	26.8

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

In terms of the officer/enlisted status of the military member to which the civilian spouses is married, spouses married to officers tend to have the highest proportions in the Army (36% versus 35.8%) and the Air Force (34.8% versus 28.8%), while those married to enlisted personnel have higher proportions in the Navy (27.2% versus 23.1%) and the Marines (8.2% versus 6.1%). Again, this pattern largely mirrors that found with the active duty force. The Air Force (1 officer to 4.1 enlisted members) and the Army (1 officer to 5.2 enlisted members) have the highest concentration of officers within their branch, while the Navy (1 officer to 5.9 enlisted members) and the Marine Corps (1 officer to 8.7 enlisted members) have the lowest (MFRC 2000).

Significant differences were found between all racial groups for the proportion of those groups in the Army, with blacks having the highest proportion in the Army (57%) followed by Whites (31.6%) and Asians (26.1%). In the Navy, differences between each of the groups was also significant, with 36.7% of Asian spouses married to someone in the Navy, followed by 27.3% of White spouses and 18.7% of Black spouses. Blacks had a significantly lower proportion of their racial group in the Air Force (17%) than either Whites (33%) or Asians (30.6%), who did not differ significantly from one another. Race had no significant relationship with the proportion of spouses in the Marine Corps.

Chapter Summary

In summary, this analysis shows that civilian husbands are older than civilian wives, less likely to fall into the lowest education categories (i.e., having a high school

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diploma, a GED, or less) and more likely to be in the highest (i.e., having completed at least some graduate schooling). Civilian husbands also have fewer children than civilian wives and are less likely have young children. The percentage of spouses who are remarried is higher for civilian husbands than for civilian wives and, related to this, they have not been in their current marriage as long. Sex was not strongly related to the paygrade of the military members to which these spouses are married, with civilian husbands only being more likely to be married to the most junior personnel. However, sex is an important consideration in both veteran and reservist status, where civilian husbands are more likely to be veterans and in the Guard/Reserves. In terms of branch of service, civilian husbands had a higher proportion married to Air Force personnel and lower proportion married to Marines than civilian wives.

Looking at the various racial differences, I find that Asian spouses tend to be older than both White and Black spouses. While White spouses generally tend to be older that Black spouses, once the officer/enlisted status of the military member to which the spouse is married is controlled, Blacks are actually slightly older than Whites. Educationally, a significant proportion of Asian wives appear to be especially disadvantaged, although a large proportion of Asians had also completed a four-year degree. White husbands appear to be especially advantaged in terms of their education. Blacks were especially concentrated at the High School Diploma/GED and "Some College" levels, but had particularly low proportions of their racial group in higher educational categories. Asian spouses tended to have been married the longest while White spouses are most likely to be in their second or later marriage. While Whites were likely to have fewer children than other racial groups, Blacks were more

likely to have young children. In the enlisted ranks, a high proportion of Black spouses were married to lower to mid-grade military members (E1 – E6). Significantly higher proportions of White spouses were married to officers. Black spouses were more likely to be veterans than other racial groups, while Asians had a particularly low proportion of their groups falling into this category. The military members married to Black civilian spouses are heavily concentrated in the Army and least concentrated in the Air Force and Navy. White spouses are most likely to be married to military members who serve in the Air Force, while Asian spouses are most likely to be married to military members who serve in the Navy.

In terms of differences between the spouses of officers and the spouses of enlisted personnel, I find that the spouses of officers tend to be older and better educated than the spouses of enlisted personnel (i.e., they are more likely to have at least a four-year degree). Spouses of officers are also less likely to be remarried and have been in their marriages longer than the spouses of enlisted personnel. They also have more children, but are less likely to have a young child than enlisted members' spouses. While the spouses of officers were also more likely to be serving in a Guard/Reserve unit, the spouses of enlisted personnel were more likely to be veterans. Officers also tend to be more heavily concentrated in Army and Air Force, and less so in the Navy and Marine Corps.

CHAPTER V: GEOGRAPHIC MOBILITY AND TIED MIGRATION

Armed with a general description of the sample developed in the previous chapter, I turn now toward an analysis of geographic mobility and tied migration in the military. The primary purpose of this chapter is to gather evidence about whether or not gender, race, or class influences the geographic mobility of civilian spouses of military personnel and the likelihood that these spouses will move when their military member is reassigned to a new duty location. In order to gather such evidence, I examine two indicators of geographic mobility in some detail: the frequency with which spouses move, as measured by the average number of years a spouse experiences between geographic relocations, and the tied migration rate. The tied migration rate indicates the proportion of the moves made by the military member that were also made by the civilian spouse. The means and standard deviations of these variables, as well as other indicators of geographic mobility, can be found in Table 5.1.

In order to control for a variety of factors that might also be associated with geographic mobility (e.g., branch of service, education level of spouse, duration of marriage, etc.) which may either account for the various differences by gender, race, and class, or exacerbate them, I turn to multivariate regression. Ordinary least squares (OLS) regression models are estimated for the two primary indicators of geographic mobility. First, a general model was estimated for all of the spouses included in this study. Second, separate models were estimated for each gender in order to examine

Table 5.1: Geographic Mobility Variables by Sex, Race, and Class

	Mean Time Between Moves[acde]		Tied Migration Rate[abc]		Time on Station[bcde]		Number of Moves[abde]		Years Overseas[bcde]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex										
Men	3.5	1.6	91.3	22.3	2.6	2.5	1.7	1.1	1.5	1.5
Women	3.0	2.3	96.1	43.4	2.5	3.6	2.7	2.7	1.5	2.7
Race										
White	3.0	2.0	97.2	38.2	2.5	3.3	2.7	2.4	1.4	2.3
Black	3.1	3.2	91.6	62.2	2.2	3.9	2.2	3.2	1.6	3.6
Asian	3.4	2.7	90.3	41.3	2.9	4.1	2.5	2.7	2.6	4.2
Class										
Enlisted	3.1	3.7	95.4	73.4	2.5	5.7	2.2	3.5	1.5	4.1
Officer	2.9	1.2	97	16.2	2.3	1.4	4.2	1.6	1.8	1.4
Total	3.1	2.2	95.8	40.7	2.5	3.4	2.6	2.5	1.5	2.5

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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how race and class differences may vary by gender. In order to determine if the parameter estimates of men differ significantly from those of women, an interaction model was also estimated which interacted sex with each of the other variables in the equation. Although this interaction model is not specifically presented, significant interactions are indicated in the regression results (in both the tables and the text).

In modeling these variables, I included variables to indicate the sex, race, and class of the civilian spouse. The coefficient of the sex variable can be interpreted as the difference in geographic mobility between men and women. The coefficients of the race variables included in this model are interpreted relative to the excluded group: White. However, because being born outside the U.S. to non-military parents may significantly affect the geographic mobility of spouses, especially Asian spouses, I controlled for being born overseas and included an interaction term, interacting being born overseas with being Asian. Such an interaction term changes the interpretation of the coefficient for the Asian dummy variable and the Born Overseas dummy variable (see Neter, et. al. 1996 for a more detailed explanation of interpreting interaction regression models) as the parameters for each of these variables depend on the level of the other variable. In the models presented, the Asian parameter estimate indicates how those Asians born either inside the U.S. or to military parents overseas compare with Whites. The born overseas parameter estimate indicates the effect of being born overseas for those who are not Asian. The Asian by born overseas interaction term indicates the difference between those Asians born in the U.S. or to military parents overseas and those Asians born overseas to non-military parents. The net effect of being Asian (relative to Whites), for those born overseas, can be

calculated by adding the Asian coefficient to the Asian x Born Overseas coefficient (Neter 1996). Likewise, the net effect of being born overseas for Asians can be calculated by adding the Born Overseas coefficient to the Asian x Born Overseas coefficient. Class is represented by military paygrade in these models. I chose not to simply use an officer/enlisted split, but to allow civilian spouses to vary across a broader range of military paygrades (i.e., of the military member to whom they are married). The excluded group is those civilian spouses married to military members who are grade O-4 or higher. Thus, the other paygrade coefficients must be interpreted relative to this group.

In addition to considering gender, race, and class simultaneously, other background variables potentially related to geographic mobility were controlled. Two family-related variables were controlled: number of children and whether or not the civilian spouse has been remarried. The number of years the spouse has been in his or her current marriage was not controlled, as this factor is a direct component of the average time between moves (i.e., number of moves made during marriage divided by the length of the marriage) and is highly correlated with age ($r = 0.709$, $p \leq 0.001$). Thus, while years married was not included, age, as a continuous variable, was included. The education level of the spouse was also controlled by including four dummy variables to indicate the highest level of education achieved: less than a high school education, some college, a four-year college degree, and graduate school/graduate degree. The coefficients of these dummy variables are interpreted relative to those who have a high school diploma or GED as their highest level of education, which is the excluded group.

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Military-related control variables were also included in the regression equations that may influence the geographic mobility of the civilian spouse to include whether or not the civilian spouse is a veteran and whether or not the civilian spouse is currently serving in the Reserves or National Guard. The branch of service of the military members to whom these civilian spouses are married is also controlled. The Army is the excluded branch, so the coefficients of the other branches must be interpreted relative to that service.

Mean Time Between Moves

Overall, civilian spouses in this sample tend to move about once every 3 years. However, not everyone moves at this rate. Once the factors listed above are controlled in regression analysis, several differences emerge (Table 5.2). Looking at the coefficient for the sex variable, I find that net of other factors in the model, civilian wives tend to move more frequently than civilian husbands. On average, wives experience almost a half of a year less between moves then do husbands. While there is no significant difference between Blacks and Whites on this variable, Asians born in the U.S. (or to military parents overseas) tend to move less frequently than Whites. Overall, Asians born in the U.S. tend to remain at an assignment, on average, about 0.9 of a year longer than Whites, while Asian men born in the U.S. average 2 years longer at each assignment than White men and Asian women average about 0.8 of a year longer than White women. There is also a significant gender difference in the effect being born overseas (to non-military parents) has on Asians. Being born

Table 5.2: Ordinary Regression - Mean Number of Years Between Moves

X	Total N = 11,488			Male N = 1,775			Female N = 9,713		
	b	s.e.	p	b	s.e.	p	b	s.e.	p
Intercept	-0.490	0.200	*	-0.557	0.505		-0.954	0.180	***
Sex	-0.466	0.095	***						
Black	0.009	0.055		0.189	0.147		-0.004	0.060	
Asian	0.895	0.209	***	2.001	0.561	***	0.804	0.226	***
Born Overseas	-0.013	0.097		-0.114	0.285		-0.004	0.104	
Asian x Born Overseas	-1.026	0.245	***	-3.408	0.879	***	-0.928	0.264	***
E1 - E4	0.775	0.098	***	0.428	0.306		0.782	0.105	***
E5 - E6	1.086	0.083	***	0.386	0.280		1.114	0.088	***
E7 - E9	1.038	0.084	***	0.013	0.313		1.075	0.089	***
O1 - O3	0.613	0.088	***	0.692	0.285	*	0.592	0.094	***
Children	0.242	0.019	***	0.307	0.061	***	0.237	0.020	***
Remarried	-0.533	0.056	***	-1.013	0.162	***	-0.500	0.061	***
Age	0.088	0.004	***	0.105	0.010	***	0.087	0.004	***
< High School	-0.005	0.099		1.041	0.455	*	-0.042	0.104	
Some College	-0.166	0.046	***	-0.188	0.149		-0.160	0.049	**
College Degree	-0.253	0.069	***	-0.431	0.226		-0.234	0.074	**
Graduate School	-0.052	0.085		-0.084	0.239		-0.057	0.092	
Veteran	-0.070	0.065		-0.053	0.151		-0.052	0.073	
Reserves	0.019	0.157		0.265	0.198		-0.109	0.206	
Navy	0.233	0.051	***	-0.054	0.163		0.253	0.055	***
Air Force	0.570	0.049	***	0.589	0.146	***	0.570	0.053	***
Marines	0.003	0.080		0.230	0.412		0.006	0.084	
F	81.187 ***			11.225 ***			73.048 ***		
R^2	0.129			0.114			0.131		
Adj. R^2	0.128			0.103			0.129		

Levels of significance (two-tailed t-test for coefficients, F-test for model):
$^*p \leq 0.05$, $^{**}p \leq 0.01$, $^{***}p \leq 0.001$

Shaded rows indicate that the difference in the coefficients for that X variable between males and females is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

overseas is related to a significantly larger increase in geographic mobility for Asian men than for Asian women. While Asian men born in the U.S. experience an extra two years between geographic relocations relative to White men, Asian men born outside the U.S. spend, on average, about 1.4 years less than White men at each location. Asian women born inside the U.S. experience 0.8 of a year longer than White women between each relocation, while Asian women born overseas spend just slightly less time (.12 of a year), on average, at each assignment.

Overall, class, as indicated by the paygrade of the military member to whom the civilian spouses is married, appears to be related to how frequently these spouses move. For the total spouse model, all paygrades in the model moved significantly less frequently (i.e., had a longer average time between moves) than did the spouses of the most senior military members. On average, spouses of more senior officers spent more than three quarters of a year less than junior enlisted members at each assignment, about a year less than mid- and senior-level enlisted personnel, and about three fifths of a year less than junior officers. This relationship, however, seems to hold mostly for civilian wives, whose numbers "overpower" the civilian husbands in the total sample. Looking at men and women separately, there is a significant difference only between the spouses of junior and senior officers for men, while the relationship between the spouses of senior officers and all ranks holds for civilian women. In addition, results from the interaction model (not shown) indicated that there is a significant difference between men and women in how the spouses of senior enlisted personnel (paygrades E7 – E9) relate to the spouses of senior officers (paygrade O4 and up). Whereas civilian husbands of senior enlisted personnel do not

differ significantly from the civilian husbands of senior officers, civilian wives of senior enlisted members have, on average, one year more between moves than civilian wives of senior officers.

Looking at family-related variables, I find that increasing numbers of children are related to decreased geographic mobility. For every child a civilian spouse has, they tend to remain at the same location, on average, about a quarter of a year longer. Thus, a civilian spouse with four children would, on average, spend about 1 year more at a given assignment than a spouse with no children at home, net of other variables in the model. This relationship holds for both men and women. Being in a second or later marriage is also significantly related to the frequency with which spouses move. In general, those spouses who are remarried move more frequently than those who are in their first marriage, with remarriage having a significantly larger influence on mobility for civilian husbands than for civilian women. Remarried husbands lose just over one year in terms of time between moves for their remarried status while remarried wives lose only half a year.

The education level and age of civilian spouses is also related to the frequency with which they move. Compared to spouses who listed a high school education or GED as their highest level of educational attainment, those spouses with some college or with a four-year college degrees move significantly more often. That is, civilian spouses with some college tend to move about 2 months earlier and those with a college degree tend to move about three months earlier than those with only a high school education or GED. The average time between moves also generally increases

with age, net of other variables in this model. No significant gender differences were detected for education or age in the interaction model.

In terms of the influence of military-related variables on the frequency of geographic mobility, being a veteran or a member of the Reserves or National Guard was not significant. However, the military member's branch of service did have an effect. Relative to civilian spouses whose military members were in the Army, both Navy and Air Force spouses moved less frequently. While no gender differences were detected in the interaction model, the Air Force effect seems to occur for both men and women while the Navy effect was not significant for civilian husbands.

Tied Migration Rate

Besides the frequency with which these civilian spouses move, it is also important to consider what proportion of moves made by the military member are also made by his or her civilian spouse. In other words, when the military member moves, how often does the civilian spouse, on average, follow? Although civilian spouses move when their military members do about 96% of the time, significant differences do still emerge. The results of the regression analysis for this tied migration variable are presented in Table 5.3. Coefficients in this model represent the change in the proportion of the military members' moves made by the civilian spouses given a change in the independent variable net of the effects of other variables in the model.

As with the frequency with which civilian spouses move, gender makes a significant contribution to the degree to which these spouses can be seen as tied migrants. On average, the percentage of moves made by civilian wives was 6.8

Table 5.3: Ordinary Regression - Tied Migration

X	Total N = 11,433			Male N = 1,834			Female N = 9,599		
	b	s.e.	p	b	s.e.	p	b	s.e.	p
Intercept	1.104	0.039	***	1.102	0.065	***	1.167	0.036	***
Sex	0.068	0.018	***						
Black	-0.046	0.011	***	-0.059	0.020	**	-0.046	0.012	***
Asian	0.035	0.042		-0.010	0.074		0.036	0.047	
Born Overseas	0.050	0.019	**	0.106	0.038	**	0.045	0.021	*
Asian x Born Overseas	-0.156	0.049	**	-0.045	0.133		-0.156	0.054	**
E1 - E4	-0.120	0.019	***	-0.117	0.039	**	-0.116	0.021	***
E5 - E6	-0.043	0.016	**	-0.035	0.036		-0.041	0.018	*
E7 - E9	-0.067	0.016	***	0.038	0.040		-0.071	0.018	***
O1 - O3	-0.040	0.017	*	0.008	0.037		-0.041	0.019	*
Children	-0.003	0.004		0.032	0.008	***	-0.005	0.004	
Remarried	-0.023	0.011	*	0.001	0.022		-0.025	0.012	*
Age	-0.004	0.001	***	-0.007	0.001	***	-0.004	0.001	***
< High School	0.042	0.019	*	-0.171	0.058	**	0.048	0.021	*
Some College	-0.007	0.009		-0.042	0.020	*	-0.005	0.010	
College Degree	-0.026	0.014		-0.019	0.029		-0.027	0.015	
Graduate School	-0.059	0.017	***	-0.053	0.031		-0.062	0.018	***
Veteran	0.059	0.013	***	0.114	0.020	***	0.050	0.015	***
Reserves	-0.051	0.031		-0.068	0.026	**	-0.030	0.043	
Navy	-0.007	0.010		-0.021	0.021		-0.007	0.011	
Air Force	0.011	0.010		0.083	0.019	***	0.006	0.011	
Marines	-0.030	0.016		-0.126	0.053	*	-0.029	0.017	
F	9.047 ***			8.934 ***			6.922 ***		
R²	0.016			0.090			0.014		
Adj. R²	0.015			0.080			0.012		

Levels of significance (two-tailed t-test for coefficients, F-test for model):
* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Shaded rows indicate that the difference in the coefficients for that X variable between males and females is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

percentage points higher than the percentage made by civilian husbands. Race is also significantly related to this measure of tied migration. Black civilian spouses were significantly less likely to move when their military member did than White spouses (a difference of 4.6 percentage points), while Asian spouses not born overseas did not differ significantly from Whites. Being born overseas was a significant factor for both non-Asian spouses and Asian spouses, although the effect was in different directions. For non-Asian spouses, being born overseas significantly increased the percentage of the military members' moves that the spouse made by 5 percentage points. For Asian spouses, however, being born overseas had the effect of decreasing the percentage of moves made by about 10.6 percentage points. Those Asians born overseas, on average, had a tied migration rate that was about 12 percentage points lower than the rate of White civilian spouses. No gender-race interactions were significant in the interaction model.

Analysis of the parameter estimates for the dummy variables indicating the paygrade of the military spouse to whom the civilian is married shows that spouses of more senior military officers make a higher percentage of their military members' moves than any other paygrade category. The percentage of moves made by the senior officers' civilian spouses is about 12 points higher than the spouses of junior enlisted personnel. This finding holds for the entire sample, as well as men and women when considered in separate models. While no significant sex-paygrade interactions were found, it is interesting to note that only the contrast between the husbands of senior officers and the husbands of junior enlisted personnel reached

significant levels for civilian men, while the pattern of significance for civilian women more closely mirrors the overall pattern in the sample.

The family-related variables also have a significant influence on this aspect of tied migration. The impact of the number of children a spouse has living with them is significantly different for men and women. For every child living with them, the mean proportion of moves made by civilian husbands increases by 3.2 percentage points. For civilian wives, however, the number of children is not significantly related to their tied migration. While I find no significant sex interaction for the dummy variable indicating whether or not a spouse is remarried, the results show the relationship between remarriage and tied migration is significant for civilian wives, but not for civilian husbands. Civilian wives who are remarried are likely to make a smaller percentage of the moves with their military husbands than civilian wives in their first marriage.

Age and education are also associated with this aspect of tied migration. In general, older spouses in this sample had a lower rate of tied migration than those who were younger. Relative to those civilian spouses with a high school diploma or GED, those in the lowest educational group tended to have higher rates of tied migration. While the sex difference in the coefficients for this variable did not quite reach statistical significance ($p = 0.057$), there does appear to be some difference in how those in the lowest education group compared to those with a high school education or GED. For civilian husbands, being in the lowest educational group is associated with a 17 percentage point decrease in the proportion of moves made by the civilian spouse; for civilian wives, being in this category is associated with about a 5

percentage point increase in the tied migration rate. Spouses in the highest education category have a tied migration rate that is about 6 percentage points lower than those with only a high school education or GED.

In terms of other military-related variables, I find that being a veteran is associated with a larger proportion of moves made by the civilian spouse. Across all spouses, the tied migration rate is about 6 percentage points higher for veterans. While Reserve/National Guard status was not significantly related to the tied migration rate for the overall sample or for women, it was for men (although the sex-Reserve/Guard status interaction was not significant). For men, being in the National Guard or Reserves was associated with a 6.8 percentage point lower tied migration rate. Differences between the tied migration rates of spouses married to Army personnel and to military members in other services are significant only for husbands. Civilian husbands married to active duty Air Force wives were significantly more likely (by 8.3 percentage points) to follow their spouse from assignment to assignment than civilian husbands of active duty Army wives. Civilian husbands married to women Marines were significantly less likely to follow their wives.

Chapter Summary

In summary, the regression analysis of these two variables demonstrate that, controlling for a multitude of background characteristics and related variables, civilian husbands generally move less frequently than civilian wives in addition to making a smaller proportion of the moves made by their military spouse. Thus, men seem more likely to be "untied stayers." Even when their wives have moved, a significant

percentage of men stay behind, possibly to maintain employment with their current employer and to avoid the potential costs of moving to a new location.

While Black civilian spouses did not differ from White civilian spouses in terms of how frequently they moved, they did differ in how likely they were to move when their military spouses did so. Black spouses generally appear to follow their military spouse less frequently than do White spouses. For some Blacks, it may be that the costs associated with finding a new job in a new location may be higher than the costs of staying without their military spouses. Asian spouses not born overseas showed a different pattern when compared to White spouses. These Asian spouses tend to move less frequently than White spouses, but make a similar proportion of the moves made by their military spouses. Asian spouses may encourage their military member to remain at each assignment as long as possible in order to take advantage of the networks of Asian spouses surrounding some military installations, so as to minimize the frequency with which new support networks must be built.

In terms of class, as indicated by the rank of the military member of the couple, the spouses of senior officers tend to move more frequently than other spouses in addition to being more likely to move when their military spouse is reassigned. This likely reflects not only the high mobility required of more senior officers, but also more of an acceptance of the traditional role of the military (i.e., senior officer's) wife which, among other things, requires that she be present at her military husband's current location.

Other variables besides gender, race, and class were also found to be significantly associated with geographic mobility. For example, family-related

variables, such as the number of children a spouse has and whether or not he or she is in a second (or later) marriage are significant. Those with more children generally tend to be less mobile than those with few or no children as measured by the average time between moves. It is certainly plausible that military families with children intentionally limit their geographic mobility in an attempt to limit the impact of such mobility on their children (e.g., having to switch schools, make new friends, etc.). Additionally, those civilian husbands with more children made a higher proportion of the moves made by their military member than those with fewer children. The number of children did not significantly influence the tied migration rate of women. This gender difference is likely a result of women being much more likely than men to move with their military spouse regardless of number of children. Remarried spouses, especially remarried husbands, tend to be more mobile than those spouses in their first marriage. However, remarried civilian wives, while being more mobile, are also less "tied" to their military husband. Thus, while being remarried may encourage mobility among civilian spouses, women in their second marriages, relative to women in their first marriages, may also have a higher level of independence or willingness to stay behind when their military spouse moves to take advantage of opportunities for themselves rather than their husbands.

Education was also a significant factor in geographic mobility. While those spouses with at least some college or with a four-year degree moved more often than those spouses with a high school diploma or GED, those spouses with a graduate education tended to be less mobile, as indicated by their decreased likelihood of moving when their military spouse was reassigned. It may be that those with a

graduate education encourage their military spouses to limit their mobility or, when the military member does move, to stay behind, in order to remain in more career-enhancing, satisfying, or lucrative jobs. Interestingly, having less than a high school education appears to have a differential effect on men and women, with less educated men being less likely to move than their high school graduate counterparts and less educated women being more likely to move. Those men with less than a high school education, if employed, may be in blue collar jobs in which seniority is the primary determinant of wages, thus encouraging them to limit their mobility.

Lastly, military-related variables also made a significant contribution to geographic mobility. While neither veteran status nor Guard/Reserve status was related to the frequency with which spouses moved, those male spouses who were in the National Guard or Reserves made a smaller proportion of their military wives' moves than did those not in the Guard or Reserves. It may be that male Guardsmen/Reservists are more likely to choose to remain associated with and in the area of their current Guard or Reserve unit rather than transfer to another unit when their active duty wife is transferred. Overall, both Navy and Air Force spouses tend to move less frequently than Army spouses, although this does not appear to hold for civilian husbands of active duty Air Force women. However, civilian Air Force husbands were more likely than civilian Army husbands to move when their military wife was reassigned. Marine Corps husbands, however, were less likely than Army husbands to move when their wife was relocated. Service differences are likely related to the specific occupations which men and women occupy within those services and their associated mobility requirements.

CHAPTER VI: REASONS FOR EMPLOYMENT AND PERCEPTIONS OF JOB OPPORTUNITIES

Understanding the general patterns of geographic mobility, I now begin to examine how this geographic mobility influences the employment situation of these civilian spouses and how this influence differs by the gender, race, and class of the spouse. I begin by examining the reasons why spouses decide to seek employment. In particular, I explore the contribution financial necessity makes toward the decision to work. Even if a spouse decides to work, he or she may have difficulty locating employment opportunities at their current location. The degree to which civilian spouses experience such difficulty will be addressed second. Lastly, over the course of their "career" as a civilian spouse of a military member, these men and women develop more general attitudes toward their employment and job opportunities. The degree to which civilian spouses are dissatisfied/satisfied with such opportunities, all things considered, will be examined last in this chapter[*].

Given that the three dependent variables in this chapter are all measured on an ordinal scale, it is not appropriate to use ordinary least squares regression techniques in this analysis. However, in preliminary analysis of these variables using a

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[*] It should be noted that the survey items examined in this chapter all have Likert-type scale responses. Previous research has demonstrated that Black and White respondents have different response styles when answering such items, with Blacks being more likely to respond using the more extreme categories (Bachman and O'Malley 1984). Thus, Black and White differences in this chapter should be interpreted cautiously. Such response-style bias, however, can be minimized by collapsing the most extreme categories into broader categories including less extreme responses (Bachman and O'Malley 1984), as was done in the more detailed analysis in this chapter.

cumulative logit model, which is appropriate for ordered categories, I found that models for each of these variables significantly violated the proportional odds assumption of this technique, indicating that this technique is also not appropriate for use with these variables. Thus, I turn to multinomial and binomial logistic regression. Multinomial logistic regression allows us to analyze the influence of the independent variables on the likelihood of being in a predetermined reference category versus another response category. For example, in the analysis of the contribution working for need makes to one's employment decision, there are four possible response categories: no contribution, minor contribution, moderate contribution, and major contribution. Choosing "major contribution" as the reference category, multinomial logistic regression allows for the simultaneous estimation (using maximum likelihood methods) of three models: comparing the likelihood of being in each of the non-reference categories relative to the reference category (e.g., "no contribution" versus "major contribution," "minor contribution" versus "major contribution," and "moderate contribution" versus "major contribution").

The coefficients of the independent variables in logistic regression (multinomial or binomial) indicate the change in the natural log of the odds (log-odds) of being in a given category versus another category that occurs as the values of the independent variable changes net of the effects of other variables in the model (Allison 2001). Because log-odds are difficult to interpret, I have converted all the coefficients of the models below which are significant at the 0.05 level to odds ratios by exponentiating them (i.e., by calculating e^{β} where e is the base of the natural logarithm and β is the regression coefficient). Subtracting 1 from the odds ratio and multiplying

by 100 allows for the interpretation of the "percent change in the odds for each 1-unit increase in the independent variable" (Allison 2001: 29) or, for dummy variables, the percent difference between the given category and a reference category. In the multinomial models presented below, the inverse of each coefficient is presented so that the coefficients and odds ratios refer to the likelihood of being in the reference category (as opposed to the likelihood of being in the non-reference category).

Two multinomial logistic regression models were estimated for each dependent variable. The first model contained only independent variables relating to the geographic mobility of civilian spouses in order to examine the relationship between an individual's geographic mobility history (number of moves made, average time between moves, number of years lived overseas), one's present geographic mobility, or stability (time on station), and the three dependent variables[*]. A second model was then estimated for each dependent variable that, in addition to the mobility independent variables, included independent variables to measure gender, race, and class differences in the dependent variables, as well as other controls that are potentially related to the outcome variable. Comparing these two models allows us to note whether any potential effects of geographic mobility on the dependent variables may be accounted for by other factors.

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[*] While all of these geographic mobility dimensions are related to one another, the degree to which they are related does not interfere with the estimation of the coefficients in regression analysis. This was determined by examining the variance inflation factor (VIF) associated with each dimension. The VIF is calculated by the formula $1/(1 - R^2)$, where R^2 is calculated by regressing each dimension on all the other dimensions. The VIFs for the geographic mobility factors are: number of moves – 1.23; time between moves – 1.21; time on station – 1.15; and years overseas – 1.18.

Additional analysis was then conducted using a dichotomous recoding of the dependent variables. The dependent variables were dichotomized such that as close as possible to 50% of the respondents fell into each response category (given that such a split also made theoretical sense). Working for financial need was dichotomized so that those who reported that financial need made a major contribution to their employment decision were coded as 1, while all others were coded as 0. In terms of the difficulty finding employment variable, those who responded that finding employment was "Somewhat of a Problem" or a "Serious Problem" were coded as 1, while all others were coded as 0. Satisfaction with employment opportunities was dichotomized by grouping together those who were dissatisfied or very dissatisfied and coding them as 1, while coding all others as 0. An analysis similar to that conducted with the multinomial models was then conducted using binary logistic regression. Two models for each dependent variable (one mobility-only model, one full model) were estimated and their results analyzed. Because the results of this binary logistic regression were consistent with those found using the more complex multinomial methodology, the results of the binary regression will primarily be discussed. Those readers wishing to see the complete results of the multinomial analysis should turn to Appendix B.

In order to evaluate how the influence of geographic mobility may differ by gender, race, and class, separate binomial logistic regression models were also estimated for men and women; Whites, Blacks, and Asians; and the spouses of enlisted personnel and the spouses of officers. Three interaction models were then estimated—a sex interaction model, a race interaction model, and a class interaction

model—in order to test statistically the significance between the coefficients of men versus women, Blacks and Asians versus Whites, and the spouses of enlisted personnel versus the spouses of officers. Although these models are not specifically presented in this dissertation, significant interaction effects are indicated in the appropriate tables below by highlighting the coefficients that differ significantly.

Because logistic regression is especially sensitive to empty cells and the number of empty cells in the population profile increases dramatically as the data are disaggregated by gender, race, and class (which in preliminary analysis prevented maximum likelihood estimates from converging regardless of the number of iterations as some coefficients approached infinity), certain modifications to the models had to be made. For example, separate analysis was not possible by more detailed rank categories. These categories were collapsed into the more general enlisted/officer split. In addition, it was necessary to drop the interaction variable for being Asian and being born outside the US, although the differences between Asians and Whites as to the effect of being born outside the US is evaluated in the race interaction models (such an interaction was not significant in any of the models). Convergence issues are also addressed by the dichotomization of the dependent variables—collapsing the response categories decreases the likelihood that no one within certain subgroups would have chosen a given response.

Multicollinearity in both the geographic mobility only models as well as the full models was evaluated by analyzing equivalent models using OLS regression and evaluating the variance inflation factors (VIFs) associated with each coefficient (Allison 2001). All of the variance inflation factors fell under 10 and the vast majority

were under 2. Therefore, it appears that multicollinearity was not especially problematic in these models.

Working for Need

Employed spouses were asked how much of a contribution financial necessity made to their employment decision: no contribution, a minor contribution, a moderate contribution, or a major contribution. For approximately 62% of the employed spouses in this sample, financial necessity made a major contribution to their decision to work for pay (Table 6.1). The results of the multinomial logistic regression (see Tables B.1 and B.2 in Appendix B) as well as the binary logistic regression (Table 6.2) for this variable indicate that while different aspects of geographic mobility are related to whether or not civilian spouses work for financial need, such relationships are accounted for by other background characteristics. When only geographic mobility is considered in the models, the number of moves made by the civilian spouse is consistently significant. Each move tends to decrease the likelihood of the spouse falling into the category in which financial need makes a major contribution to the employment decision. It decreases the likelihood of being in this category by 16.4% relative to the "No Contribution" category, 13.5% relative to the "Minor Contribution" category, and 9.1% relative to the "Moderate Contribution" category. When the dependent variable is dichotomized such that those who report financial need made a major contribution to their employment decision are coded as 1 and all other responses are coded as 0, we find that the number of moves is also negatively

Table 6.1: Percentage of Employed Spouses Indicating the Degree to Which Financial Necessity Contributed to Their Employment Decision

	No Contribution[e]		Minor Contribution[abde]		Moderate Contribution[ae]		Major Contribution[abde]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
<u>Sex</u>								
Men	3.5	11.3	6.1	14.7	15.0	21.9	75.4	26.4
Women	5.4	24.4	12.7	36.0	21.5	44.4	60.3	52.8
<u>Race</u>								
White	6.0	21.9	13.2	31.4	21.3	37.9	59.6	45.5
Black	2.8	23.8	7.8	38.6	19.0	56.6	70.5	65.9
Asian	4.6	23.7	13.4	38.8	23.8	48.5	58.3	56.1
<u>Class</u>								
Enlisted	3.3	28.1	9.4	45.8	20.2	63.0	67.0	73.7
Officer	13.8	18.0	24.3	22.4	24.3	22.4	37.6	25.3
Total	5.3	22.2	12.2	32.5	21.0	40.5	61.6	48.4

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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Table 6.2: Binomial Logistic Regression – Working for Financial Need

X	N = 6113				N = 5896			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.915	0.068	***		-0.257	0.304		
Moves	-0.125	0.013	***	0.883	0.002	0.021		
Time Between Moves	-0.047	0.013	***	0.954	-0.011	0.017		
Years Overseas	0.025	0.011	*	1.025	0.021	0.012		
Time on Station	-0.002	0.010			0.010	0.012		
Sex					-0.442	0.140	**	0.643
Black					0.196	0.083	*	1.217
Asian					0.431	0.325		
Born Overseas					-0.254	0.142		
Born*Asian					-0.331	0.377		
E1 - E4					1.994	0.162	***	7.345
E5 - E6					1.319	0.129	***	3.739
E7 - E9					0.974	0.124	***	2.648
O1 - O3					0.127	0.137		
Children					0.081	0.033	*	1.084
Child < 6					-0.071	0.074		
Remarried					0.002	0.090		
Age					-0.011	0.007		
< High School					-0.115	0.164		
Some College					0.288	0.070	***	1.333
College Degree					0.420	0.104	***	1.522
Graduate School					0.335	0.119	**	1.398
Veteran					0.281	0.099	**	1.324
Reserves					-0.214	0.204		
Navy					0.051	0.080		
Air Force					-0.190	0.074	*	0.827
Marines					-0.198	0.123		
-2 Log Likelihood Fitted Model	7550.344 ***				6792.62 ***			
Somers' D	0.117				0.312			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Odds ratios calculated only for those variables significant at the .05 level using Wald test

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related to the odds of being in the "Major Contribution category (decreasing the likelihood by 11.7%).

The frequency with which spouses move also appears to be related to whether a spouse is working for financial need, at least when only geographic mobility is considered. Those who move less frequently (i.e., have a higher average time between moves), are also less likely to be in the "Major Contribution" category versus being in the "Minor" or "Moderate" contribution categories. Such is the case in the binary model as well—for every year longer a spouse spends, on average, at an assignment, their odds of financial need making a major contribution to their employment decision decreases by 4.6%. The number of years spent overseas is also significant in the geographic mobility-only binary regression model with an increase of 2.5% in the likelihood of falling into the "Major Contribution" category being associated with each additional year of being overseas. However, looking at the full models which include gender, race, class, and controls for several background characteristics, no aspect of geographic mobility reaches levels of statistical significance.

Sex, race, and class, however, are significantly related to whether or not a spouse decides to work for reasons of financial need. In the multinomial model, women were only about half as likely as men to fall into the "Major Contribution" category versus the "Minor Contribution" category. Similarly, in the full binary logistic regression model, women were 35.7% as likely as men to fall into the "Major Contribution" category versus all other categories. Compared to White civilian spouses, Blacks were significantly more likely to be in the "Major Contribution" category relative to the "No Contribution" (63.1%) and "Minor Contribution" (41.2%)

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categories. In the binary logistic regression, Blacks were 21.7% more likely than Whites to be in the "Major Contribution" category. In terms of class, as measured by the paygrade of the military member to which the spouse is married, we also find major differences between groups. In general, relative to the spouses of the most senior military members, spouses of more junior members, especially those who are enlisted, are significantly more likely to say that financial need made a major contribution to their employment decision. At the extreme, comparing those in the "Major Contribution" category to those in the "No Contribution" category, I find that spouses of E1s – E4s were more than 20 times more likely than the spouses of more senior officers to be in the "Major Contribution" category.

In order to explore how geographic mobility may operate differently for men and women; Whites, Blacks, and Asians; and officers and enlisted personnel, the data were disaggregated and separate models and interaction models were estimated as described above (Tables 6.3 – 6.5). Significant differences between groups are highlighted in the appropriate table. Looking at the separate equations for men and women, we find no significant differences in the relationship between any of the geographic mobility variables and how financial need contributes to a spouse's decision to work. For that matter, no gender differences in any of the coefficients were significant.

Racial differences are evident in the influence of geographic mobility on how much financial need contributed to the employment decisions of civilian spouses. One such significant difference was found between Whites and Blacks on the "Years

Table 6.3: Binomial Logistic Regression – Working for Financial Need by Gender

X	Men N = 1160				Women N = 4736			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.847	0.723	*		1.342	0.177	***	.
Moves	-0.098	0.099			-0.018	0.021		
Time Between Moves	-0.020	0.053			-0.030	0.017		
Years Overseas	-0.028	0.053			0.011	0.012		
Time on Station	-0.028	0.051			0.005	0.011		
Black	0.347	0.304			0.186	0.086	*	1.205
Asian	1.053	1.070			0.114	0.170		
Born Overseas	-0.755	0.488			-0.287	0.136	*	0.750
Officer	-0.817	0.341	*	0.442	-1.245	0.088	***	0.288
Children	0.251	0.158			0.037	0.034		
Child < 6	-0.061	0.326			-0.011	0.075		
Remarried	0.153	0.351			0.000	0.093		
Age	-0.028	0.025			-0.025	0.007	***	0.975
< High School	-1.329	0.943			-0.075	0.165		
Some College	0.293	0.299			0.294	0.072	***	1.342
College Degree	0.571	0.447			0.377	0.107	***	1.458
Graduate School	0.025	0.440			0.325	0.123	**	1.384
Veteran	0.068	0.294			0.243	0.108	*	1.275
Reserves	0.234	0.393			-0.450	0.247		
Navy	0.388	0.334			0.002	0.082		
Air Force	-0.080	0.285			-0.131	0.076		
Marines	1.108	1.081			-0.200	0.124		
-2 Log Likelihood Fitted Model	420.823 **				6389.822 ***			
Somers' D	0.287				0.247			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Table 6.4: Binomial Logistic Regression – Working for Financial Need by Race

X	White N = 5152				Black N = 505				Asian N = 239			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.959	0.262	***		0.776	0.569			5.120	1.931	**	
Moves	-0.028	0.023			0.015	0.055			0.014	0.089		
Time Between Moves	-0.021	0.019			-0.042	0.049			0.059	0.074		
Years Overseas	0.032	0.014	*	1.033	-0.049	0.027			-0.059	0.049		
Time on Station	0.021	0.014			-0.205	0.041	***	0.815	0.042	0.055		
Sex	-0.644	0.157	***	0.525	0.320	0.340			-2.028	1.734		
Born Overseas	-0.255	0.152			-0.835	0.445			-0.305	0.444		
Officer	-1.184	0.093	***	0.306	-1.494	0.283	***	0.224	-1.388	0.467	**	0.250
Children	0.068	0.039			-0.082	0.083			0.231	0.155		
Child < 6	-0.132	0.084			0.559	0.186	**	1.750	0.077	0.351		
Remarried	-0.021	0.098			0.339	0.329			-0.699	0.514		
Age	-0.030	0.008	***	0.970	0.006	0.017			-0.052	0.025	*	0.949
< High School	-0.169	0.204			0.893	0.520			-0.755	0.402		
Some College	0.396	0.080	***	1.486	0.293	0.175			-1.265	0.363	***	0.282
College Degree	0.323	0.116	**	1.381	0.948	0.332	**	2.580	0.412	0.439		
Graduate School	0.352	0.136	**	1.421	0.650	0.289	*	1.915	-1.320	0.788		
Veteran	0.038	0.109			1.143	0.285	***	3.136	0.422	2.025		
Reserves	-0.252	0.214			2.205	1.715			-0.539	2.344		
Navy	0.153	0.091			-0.199	0.214			-1.158	0.405	**	0.314
Air Force	-0.057	0.083			-0.174	0.198			-0.825	0.366	*	0.438
Marines	0.111	0.141			-1.195	0.298	***	0.303	-1.829	0.583	**	0.161
-2 Log Likelihood Fitted Model	5265.408 ***				1076.463 ***				325.865 ***			
Somers' D	0.288				0.286				0.348			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

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Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Table 6.5: Binomial Logistic Regression – Working for Financial Need by Class

X	Enlisted N = 1706				Officer N = 4190			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	2.093	0.259	***		0.053	0.513		
Moves	-0.059	0.025	*	0.943	0.028	0.037		
Time Between Moves	-0.050	0.019	**	0.951	0.023	0.034		
Years Overseas	0.019	0.014			-0.017	0.027		
Time on Station	0.002	0.012			0.017	0.030		
Sex	-0.401	0.161	*	0.670	-0.942	0.266	***	0.390
Black	0.179	0.088	*	1.195	0.355	0.238		
Asian	0.275	0.182			-0.056	0.427		
Born Overseas	-0.419	0.143	**	0.658	-0.147	0.326		
Children	0.057	0.038			0.075	0.068		
Child < 6	-0.008	0.082			-0.208	0.168		
Remarried	-0.052	0.101			0.277	0.198		
Age	-0.031	0.008	***	0.969	-0.005	0.014		
< High School	-0.056	0.167			-0.422	0.889		
Some College	0.279	0.074	***	1.322	0.211	0.238		
College Degree	0.576	0.131	***	1.778	0.214	0.246		
Graduate School	0.186	0.166			0.233	0.244		
Veteran	0.309	0.114	**	1.361	-0.172	0.222		
Reserves	-0.361	0.249			-0.043	0.358		
Navy	-0.009	0.091			0.056	0.169		
Air Force	-0.131	0.084			-0.181	0.154		
Marines	-0.255	0.136			0.116	0.273		
-2 Log Likelihood Fitted Model	5281.083 ***				1494.781 ns			
Somers' D	0.242				0.203			

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Overseas" variable. While longer stays overseas were associated with a higher likelihood of financial need contributing in a major way to the employment decision for Whites, it was not a significant factor for Blacks, although the coefficient was in the opposite direction. Black spouses also differed from White spouses in terms of the influence of the number of years the spouse has been at their present geographic location. While the coefficient for this variable was not significant for Whites (although it was in a positive direction), Black civilian spouses had a decreased likelihood that financial necessity contributed to their need to work by 18.5% for each year they were at their current assignment location. Asians did not differ significantly from Whites on the coefficients of any of the mobility variables.

Besides geographic mobility, Black and White spouses also differed as to the influence of gender on how financial need contributed to the decision to work. For White spouses, wives were only about half as likely as husbands to say that financial need made a major contribution to their employment decision. For Black spouses, the sign of the coefficient was in the opposite direction (meaning that Black wives were more likely than black husbands to be in this category), but the coefficient was smaller and not statistically significant.

Blacks also differed significantly from Whites on the coefficients of three other variables: whether or not there was a child less than six, whether or not the spouse was a veteran, and whether the military member married to the spouse was a Marine (versus in the Army). Having a child less than six increased the likelihood of a Black spouse saying that financial need made a major contribution to his/her employment decision by 75%, while this coefficient was non-significant for Whites. Black spouses

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who were veterans of military service were more than three times as likely to place themselves in the "Major Contribution" category relative to Black non-veterans, while, again, veteran status was not significant for Whites. Relative to Black spouses whose military members were in the Army, Black spouses with Marine mates were 69.7% less likely to be in the "Major Contribution" category. Branch of service was not significant at all for White spouses.

For Asian spouses, however, branch of service was significant at levels that were significantly different from White spouses. Relative to Asian Army spouses, Asian spouses married to military members in all other branches of service were significantly less likely to fall into the "Major Contribution" category. Asian Marine spouses were most different from Asian Army spouses, being only .161 times as likely to say that financial need made a major contribution to their employment decision. Asians also differed from Whites in terms of how education affected this dependent variable. For example, while White spouses with some college or with a graduate education were significantly more likely than similar high school graduates to be in the "Major Contribution" category, Asian spouses with the same education level were less likely to be in this category (although the Asian coefficient for graduate education did not reach statistical significance).

In terms of class differences, as indicated by differences between the spouses of enlisted personnel and the spouses of officers, the interaction model indicated that only one difference was significant—the number of moves a civilian spouse has made. For spouses of enlisted personnel, having made a higher number of moves in the past was associated with a decrease in the likelihood that they would fall into the "Major

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Contribution" category (by about 5.7% per move). For the spouses of officers, no geographic mobility variable had a significant influence on this dependent variable. While not significantly different from the coefficients of the spouses of officers, it should be noted that several other coefficients in the enlisted model were significantly different from zero. In particular, older enlisted spouses tend to be less likely to work for reasons of financial need while those who are more educated, particularly those with some college or a four-year degree, are more likely to work for financial need.

Finding a Job

Even if a spouse seeks to work out of financial necessity, he or she may have some difficulty finding civilian employment. Civilian spouses were asked how much of a problem finding civilian employment was after their move to their current location. The four response levels analyzed for this variable include: not a problem, a slight problem, somewhat of a problem, and serious problem. Approximately 54% of spouses felt that finding employment was somewhat of a problem or a serious problem (Table 6.6).

When the difficulty spouses have finding employment is analyzed using multinomial logistic regression (see Tables B.3 and B.4 in Appendix B), geographic mobility is an important factor. When only geographic mobility factors are considered, an increase in the number of moves made, the average time between moves, and the length of time a spouse has been at their current location all lead to a decrease in the likelihood of finding employment being a serious problem versus each of the other response categories. The influence of the years overseas variable,

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Table 6.6: Percentage of Spouses Indicating How Difficult it was to Find Employment at Their Current Location

	Not a Problem[abce]		Slight Problem[a]		Somewhat of a Problem[bd]		Serious Problem[ab]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
<u>Sex</u>								
Men	19.6	24.1	15.0	21.7	26.6	26.8	38.8	29.6
Women	26.5	47.1	20.5	43.1	23.8	45.5	29.2	48.5
<u>Race</u>								
White	27.0	40.9	19.5	36.5	24.7	39.7	28.8	41.7
Black	23.5	62.7	21.7	60.9	20.7	59.8	34.1	70.0
Asian	21.4	46.4	22.2	47.0	27.1	50.2	29.3	51.5
<u>Class</u>								
Enlisted	25.2	69.6	20.6	64.9	23.8	68.4	30.4	73.8
Officer	29.2	24.1	18.3	20.5	24.9	22.9	27.6	23.7
Total	26.0	43.6	20.1	39.9	24.0	42.5	29.9	45.5

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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however, is in the opposite direction—each year spent overseas leads to a 3.5% to 5.1% increase in the likelihood of indicating finding employment is a serious problem versus each of the other response categories. When other variables are controlled for in the multinomial model, two mobility variables retain their significance. For every year that a civilian spouse has lived at his/her present location, the likelihood of having serious problems finding employment falls by between 6.8% and 9.1%, depending on which category the comparison is being made with. The relationship between the number of years spent overseas and the seriousness of the problem of finding work is in the opposite direction. For every additional year spent at an overseas location, the increase in the likelihood of falling into the "Serious Problem" category versus each of the other categories ranges from 3.1% to 4.4%.

In the binary logistic regression (Table 6.7), the categories of how problematic finding employment was for civilian spouses were collapsed so that "Not a Problem" and "Slight Problem" were coded as 0, while "Somewhat of a Problem" and "Serious Problem" were coded as 1. This variable will be discussed below as the "difficulty finding employment" with an increased likelihood of being coded as 1 associated with an increased difficulty finding employment. With the exception of the non-significance of the number of years spent overseas in the mobility-only model, the results are very similar to the multinomial model. In the binary logistic regression model including other variables in addition to the mobility variables, every year spent

Table 6.7: Binomial Logistic Regression – Difficulty Finding Civilian Employment

X	N = 8219				N = 7907			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.546	0.055	***		0.764	0.247	**	
Moves	-0.041	0.011	***	0.960	0.020	0.017		
Time Between Moves	-0.053	0.012	***	0.948	-0.021	0.014		
Years Overseas	0.014	0.009			0.024	0.010	*	1.024
Time on Station	-0.053	0.011	***	0.948	-0.049	0.011	***	0.952
Sex					-0.424	0.110	***	0.655
Black					-0.013	0.063		
Asian					0.192	0.243		
Born Overseas					0.079	0.115		
Born*Asian					0.054	0.287		
E1 - E4					0.464	0.128	***	1.590
E5 - E6					0.296	0.107	**	1.344
E7 - E9					0.207	0.106		
O1 - O3					0.156	0.114		
Children					-0.062	0.027	*	0.940
Child < 6					-0.179	0.058	**	0.836
Remarried					0.305	0.072	***	1.356
Age					-0.018	0.006	**	0.982
< High School					-0.255	0.127	*	0.775
Some College					0.235	0.055	***	1.265
College Degree					0.482	0.085	***	1.619
Graduate School					0.614	0.102	***	1.848
Veteran					0.272	0.077	***	1.313
Reserves					-0.278	0.185		
Navy					0.064	0.064		
Air Force					-0.088	0.059		
Marines					0.030	0.099		
-2 Log Likelihood Fitted Model	10977.246 ***				10355.739 ***			
Somers' D	0.144				0.217			

Levels of significance (Wald Chi-Square): * $p \le .05$, ** $p \le .01$, *** $p \le .001$
Odds ratios calculated only for those variables significant at the .05 level using Wald test

overseas was significantly related to a 2.4% increase in difficulty finding employment, while each year spent at their current assignment resulted in decreased difficulty (by 4.8%).

Gender also affects problems finding employment: Civilian wives are generally less likely than civilian husbands to experience difficulty finding employment (Table 6.7). In the binary logistic regression, women were 34.5% less likely than men to have difficulty finding employment. While race was not a significant factor in the binary regression, it was significant in the multinomial regression in two comparisons (see Table B.4 in Appendix B). Relative to the "Not a Problem" and "Somewhat of a Problem" categories, Black spouses were significantly more likely than White spouses to fall into the "Serious Problem" category by 19.2% and 30.9%, respectively. Asians did not differ from Whites at all in these models.

Relative to the spouses of more senior officers, the spouses of enlisted personnel are generally much more likely to have serious problems finding employment. For example, comparing those in the "Not a Problem" and "Serious Problem" categories, the most junior enlisted spouses are 2.3 times as likely as the spouses of more senior officers to fall into the "Serious Problem" category (Table B.4 in Appendix B). In the binary logistic regression, spouses of E1 – E4s were 59% more likely than the spouses of more senior officers to experience difficulty finding employment, while the spouses of E5 – E6s were 34.4% more likely (Table 6.7).

When the data for this dependent variable were disaggregated by sex and interaction models were estimated (Table 6.8), no significant differences were found

Table 6.8: Binomial Logistic Regression – Difficulty Finding Civilian Employment by Gender

X	Men N = 1485				Women N = 6422			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.090	0.548	*		0.893	0.141	***	
Moves	0.097	0.081			0.008	0.017		
Time Between Moves	-0.027	0.044			-0.023	0.015		
Years Overseas	0.037	0.044			0.020	0.010	*	1.020
Time on Station	-0.080	0.051			-0.051	0.012	***	0.950
Black	-0.214	0.226			0.002	0.066		
Asian	-1.842	0.743	*	0.158	0.343	0.134	*	1.408
Born Overseas	1.720	0.624	**	5.582	-0.016	0.110		
Officer	0.105	0.298			-0.196	0.072	**	0.822
Children	-0.087	0.124			-0.069	0.028	*	0.933
Child < 6	0.165	0.257			-0.189	0.060	**	0.828
Remarried	0.577	0.284	*	1.780	0.287	0.075	***	1.332
Age	-0.028	0.018			-0.023	0.006	***	0.977
< High School	-0.630	0.764			-0.239	0.128		
Some College	0.208	0.230			0.231	0.057	***	1.260
College Degree	0.004	0.344			0.493	0.087	***	1.637
Graduate School	0.136	0.380			0.617	0.105	***	1.853
Veteran	0.336	0.236			0.246	0.083	**	1.279
Reserves	-0.241	0.312			-0.252	0.234		
Navy	-0.039	0.254			0.044	0.066		
Air Force	0.130	0.234			-0.106	0.061		
Marines	0.398	0.683			0.014	0.100		
-2 Log Likelihood Fitted Model	632.851 *				9703.121 ***			
Somers' D	0.184				0.180			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

as to how geographic mobility affected men and women. However, the coefficients of two other variables, being Asian (versus being White) and being born overseas, were significant. While Asian men were significantly less likely than White men to have difficulty finding employment (by 84.2%), Asian women were significantly more likely than White women to do so (by 40.8%). Additionally, while being born overseas significantly (and substantially) increased the likelihood that men would indicate that finding employment was difficult, it was not a significant factor for women.

When the data were disaggregated by race (Table 6.9), several geographic mobility interactions were significant. While the number of moves a spouse has made is not a significant predictor for both Whites and Asians, each additional move for Black spouses is associated with an increase of 16.7% in the likelihood of experiencing difficulty finding employment. Black spouses also differ significantly from White spouses in terms of how a spouse's time on station and number of years spent overseas relates to the seriousness of the problem of finding employment. An increasing time on station is significantly associated with a decrease in the difficulty of finding employment for both Whites and Blacks. However, the length of time on station has a significantly greater effect for Blacks than Whites—decreasing the odds of experiencing such difficulty by 19.7% per year for Blacks and only 3.5% per year for Whites. While the number of years stationed overseas generally has a negative effect for White spouses (i.e., increasing their odds of being in the "Somewhat of a Problem" or "Serious Problem" categories), the effect is actually positive for Blacks.

Table 6.9: Binomial Logistic Regression – Difficulty Finding Civilian Employment by Race

X	White N = 6842				Black N = 693				Asian N = 372			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.358	0.210	***		1.570	0.438	***		-0.654	1.019		
Moves	-0.027	0.019			0.154	0.043	***	1.167	0.114	0.067		
Time Between Moves	-0.041	0.016	*	0.960	0.012	0.042			0.041	0.048		
Years Overseas	0.041	0.012	***	1.041	-0.054	0.026	*	0.948	-0.011	0.031		
Time on Station	-0.036	0.012	**	0.965	-0.219	0.036	***	0.803	0.003	0.043		
Sex	-0.559	0.129	***	0.572	-0.231	0.241			0.731	0.823		
Born Overseas	0.116	0.125			-0.389	0.330			0.103	0.303		
Officer	-0.171	0.078	*	0.843	-0.009	0.226			-0.136	0.304		
Children	-0.048	0.032			-0.153	0.062	*	0.858	0.061	0.107		
Child < 6	-0.158	0.068	*	0.854	-0.415	0.137	**	0.661	0.541	0.239	*	1.718
Remarried	0.303	0.081	***	1.353	-0.109	0.191			0.746	0.370	*	2.109
Age	-0.019	0.007	**	0.982	-0.037	0.013	**	0.964	-0.021	0.019		
< High School	-0.304	0.155			1.300	0.466	**	3.668	-0.838	0.295	**	0.433
Some College	0.295	0.064	***	1.343	0.292	0.126	*	1.340	-0.210	0.267		
College Degree	0.494	0.097	***	1.639	0.406	0.239			0.150	0.293		
Graduate School	0.601	0.117	***	1.824	0.811	0.246	***	2.251	-0.859	0.542		
Veteran	0.158	0.088			0.772	0.177	***	2.165	-0.288	0.771		
Reserves	-0.190	0.197			-1.783	0.687	**	0.168	2.719	2.962		
Navy	0.080	0.074			-0.239	0.165			0.374	0.265		
Air Force	-0.148	0.068	*	0.862	0.424	0.156	**	1.528	0.019	0.251		
Marines	-0.032	0.114			0.427	0.237			-0.204	0.441		
-2 Log Likelihood Fitted Model	7714.879 ***				1890.963 ***				605.427 *			
Somers' D	0.213				0.202				0.143			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

In addition to racial differences in the influence of geographic mobility on the problem of finding employment, other racial differences were also significant. In terms of familial variables, having a child less than 6 appears to decrease the problem of finding employment for White and Black spouses (perhaps fewer of them are looking for employment), while significantly increasing the difficulty for Asian spouses. While those White (and Asian) spouses who were in their second or later marriage were more likely than those in their first marriage to have difficulty finding employment, this characteristic was non-significant for Blacks.

Looking at the education variables, relative to high school graduates, increasing education for White spouses generally leads to an increasing difficulty in finding employment. For Black spouses, while this pattern generally holds (and is especially strong for those who have had graduate education), those Blacks with less than a high school education are 3.7 times as likely as Black high school graduates to experience such difficulty. Those White spouses with less than a high school education do not differ significantly from those White spouses with a high school education. Asian spouses also differ from White spouses in terms of the impact of education, but at the other end of the spectrum. While White spouses with at least some graduate education experience an 86.2% increase in the likelihood of experiencing difficulty finding employment relative to White high school graduates, Asian spouses with a graduate education do not differ significantly from Asian high school graduates.

Significant racial differences were also found within the military-related control variables between White and Black spouses. While being a veteran or in the

Reserves/National Guard, did not seem to affect the difficulty White spouses had in their search for employment, the same cannot be said of Black spouses. Black spouses who were veterans were more than twice as likely as non-veterans to experience difficulty finding employment. Reservist/National Guard duty worked in the opposite direction for Black spouses-greatly decreasing the likelihood that they would have difficulty finding employment. It may be that Black spouses are especially able to take advantage of network connections made through their Guard or Reserve unit to ease the process of finding employment.

Whites and Blacks whose military members were in the Air Force differed significantly from those with Army spouses, but differed in different directions. For White spouses, their military member being in the Air Force was related to a reduction in the difficulty associated with finding employment, while Black spouses with military members in the Air Force tended to experience greater difficulty, relative to those with military spouses in the Army. Service differences may be related to a location effect—as the various installations of the different services are geographically concentrated in different areas of the country (e.g., there is a large Naval concentration near major coastal cities in California and Virginia). To the extent that there are general differences in the labor markets of the areas in which the services are concentrated, one would expect some differences to emerge in how problematic it is to find employment.

When the data for this variable were disaggregated by class (officer/enlisted status of the military member) (Table 6.10), only one difference in coefficients was

Table 6.10: Binomial Logistic Regression – Difficulty Finding Civilian Employment by Class

X	Enlisted N = 2368				Officer N = 5539			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.448	0.202	***		0.776	0.442		
Moves	-0.001	0.019			0.024	0.031		
Time Between Moves	-0.037	0.016	*	0.964	0.005	0.031		
Years Overseas	0.028	0.011	*	1.028	0.006	0.024		
Time on Station	-0.037	0.012	**	0.964	-0.121	0.028	***	0.886
Sex	-0.447	0.123	***	0.639	-0.461	0.240		
Black	-0.035	0.067			0.240	0.200		
Asian	0.318	0.143	*	1.375	-0.149	0.329		
Born Overseas	0.003	0.117			0.350	0.256		
Children	-0.067	0.031	*	0.936	-0.080	0.056		
Child < 6	-0.173	0.065	**	0.842	-0.136	0.133		
Remarried	0.327	0.080	***	1.387	0.203	0.171		
Age	-0.026	0.006	***	0.974	-0.009	0.012		
< High School	-0.272	0.130	*	0.762	0.366	0.587		
Some College	0.228	0.058	***	1.256	0.197	0.192		
College Degree	0.526	0.105	***	1.692	0.344	0.199		
Graduate School	0.677	0.150	***	1.969	0.424	0.201	*	1.528
Veteran	0.267	0.085	**	1.306	0.194	0.183		
Reserves	-0.398	0.227			-0.055	0.320		
Navy	0.076	0.071			-0.094	0.143		
Air Force	-0.122	0.067			0.044	0.126		
Marines	0.045	0.109			-0.016	0.229		
-2 Log Likelihood Fitted Model	8230.714 ***				2110.081 ***			
Somers' D	0.233				0.241			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

significant. Both spouses of officers and spouses of enlisted personnel, experienced a decrease in the likelihood of having difficulty finding employment for each additional year they were present at their current geographical location. However, spouses of officers receive significantly more of a decrease per year (11.4%) than do spouses of enlisted personnel (3.6%).

While not significantly different from one another, other variables emerged as significantly different from zero when the data were disaggregated by class. Education appears to be particularly important, as both enlisted spouses and officers' spouses with a graduate education were more likely to experience difficulty finding employment than similar spouses with a high school diploma or GED. For enlisted spouses, any education greater than a high school diploma was associated with increased difficulty in finding employment. Such a relationship also generally held for women, Whites, and Blacks, when the data were disaggregated by gender and race. Younger enlisted spouses and those who were veterans also had more difficulty finding employment. While those enlisted spouses with more children and younger children appear to have less difficulty finding employment, it may be that such spouses seek work less often and, thus, experience less difficulty.

Satisfaction with Job Opportunities

Another perspective on the difficulty some spouses experience with finding employment is given by the spouses' overall satisfaction or dissatisfaction with job opportunities and employment in the broader context of their overall experience, rather than just after their last permanent change of station. These civilian spouses

were asked about such satisfaction/dissatisfaction and responded to the following choices: Very Satisfied, Satisfied, Neither Satisfied/Dissatisfied, Dissatisfied, and Very Dissatisfied. Note that this variable is coded so that higher response levels are indicative of more dissatisfaction so that the analysis of this variable is congruent with the analysis of the problems finding civilian employment variable, where higher categories were indicative of more problems. Overall, very few spouses (1.5%) were very satisfied with their employment opportunities. This is in sharp contrast to the relatively high percentage of spouses (46%) who were dissatisfied or very dissatisfied with their opportunities (Table 6.11).

Geographic mobility appears to play an important role in the satisfaction of civilian spouses with job opportunities. Examining the results of the multinomial logistic regression (see tables B.5 and B.6 in Appendix B), I find that the number of years the spouse has been at his/her current geographic location is negatively associated with being "very dissatisfied" versus each of the other response categories (i.e., those who have been there longer tend to be less dissatisfied). This finding holds before and after the various control variables are added to the model. The number of years the spouse has been overseas is also a significant factor in all but the very satisfied versus very dissatisfied comparison. In general, more time overseas is associated with an increased likelihood of being very dissatisfied. Again, this finding holds even after various controls have been added. Two variables that showed relatively consistent results in the multinomial models when only geographic mobility was considered were the number of moves made and the mean time between moves. An increase in each was generally associated with a decreasing likelihood of being

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Table 6.11: Percentage of Spouses Indicating How Dissatisfied They are with Employment Opportunities

	Very Satisfied[be]		Satisfied[abe]		Not Satisfied or Dissatisfied[abd]		Dissatisfied		Very Dissatisfied[abd]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Sex										
Men	1.4	7.3	21.0	25.4	19.9	24.9	27.6	27.9	30.2	28.7
Women	1.5	12.9	24.5	46.0	29.2	48.6	28.6	48.3	16.2	39.4
Race										
White	1.2	10.3	24.8	40.4	30.2	42.9	28.1	42.0	15.7	34.0
Black	2.3	22.4	21.6	61.9	21.5	61.8	30.6	69.3	24.0	64.2
Asian	1.8	15.1	25.4	49.9	29.3	52.2	28.0	51.5	15.6	41.6
Class										
Enlisted	1.4	18.7	23.8	68.1	28.3	72.1	28.8	72.4	17.7	61.0
Officer	1.8	7.1	26.2	23.5	29.5	24.4	27.2	23.8	15.2	19.2
Total	1.5	12.0	24.3	43.0	28.6	45.3	28.5	45.3	17.2	37.9

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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"very dissatisfied" (in three of the four comparisons). However, once various controls were added, their influence was only significant in the satisfied versus very dissatisfied comparison. Their coefficients, though, were in the same direction.

In the binary logistic regression model (Table 6.12), the dependent variable was dichotomized such that those who responded "dissatisfied" or "very dissatisfied" were coded as 1 (and will be discussed as "dissatisfied"), while all others were coded as 0. In the model including only the geographic mobility variables, results were very similar to what was achieved in the multinomial model: an increasing amount of time on station, an increasing average time between moves, and an increasing number of moves are all associated with just over a 5% decrease per year in the chance of being dissatisfied. Each year spent overseas was associated with a 2.5% increase in the likelihood of being dissatisfied. However, after the additional variables were introduced into the binary regression equations, only the effects of the mean time between moves and the amount of time at their current duty location remained significant. For each additional year of average tour length, the likelihood of being dissatisfied decreased by 4.2%. For each additional year that the spouse was at his or her current location, the likelihood of being dissatisfied decreased by 5.6%.

Gender, race and class differences were also significant in these models. In general, women appear to be less dissatisfied with employment opportunities than men. The likelihood of a civilian wife being dissatisfied is 35.3% lower than the likelihood of a civilian husband being dissatisfied. While Asians do not appear to differ significantly from Whites in terms of their levels of dissatisfaction, Blacks do.

Table 6.12: Binomial Logistic Regression – Dissatisfaction with Job Opportunities

X	N = 10147				N = 9789			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.258	0.050	***		0.185	0.228		
Moves	-0.053	0.010	***	0.948	-0.018	0.016		
Time Between Moves	-0.055	0.011	***	0.947	-0.043	0.013	**	0.958
Years Overseas	0.025	0.008	**	1.025	0.007	0.009		
Time on Station	-0.054	0.010	***	0.948	-0.058	0.011	***	0.944
Sex					-0.436	0.103	***	0.647
Black					0.352	0.061	***	1.422
Asian					-0.175	0.221		
Born Overseas					0.239	0.108	*	1.269
Born*Asian					0.083	0.263		
E1 - E4					0.346	0.116	**	1.414
E5 - E6					0.445	0.098	***	1.561
E7 - E9					0.486	0.097	***	1.625
O1 - O3					0.158	0.103		
Children					-0.121	0.025	***	0.886
Child < 6					-0.145	0.054	**	0.865
Remarried					0.149	0.066	*	1.161
Age					0.001	0.005		
< High School					-0.203	0.118		
Some College					0.228	0.051	***	1.257
College Degree					0.555	0.077	***	1.742
Graduate School					0.512	0.094	***	1.668
Veteran					0.124	0.071		
Reserves					-0.422	0.174	*	0.656
Navy					-0.201	0.059	***	0.818
Air Force					-0.148	0.054	**	0.862
Marines					-0.012	0.090		0.989
-2 Log Likelihood Fitted Model	12983.773 ***				12168.862 ***			
Somers' D	0.143				0.252			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Odds ratios calculated only for those variables significant at the .05 level using Wald test

In general, Black spouses are 42.2% more likely than Whites to be dissatisfied. However, the multinomial model provides some evidence that when comparing the most extreme response categories (very satisfied versus very dissatisfied), being Black is actually associated with a decreased likelihood of being "very dissatisfied." However, given the relatively small proportion of Blacks in the "very satisfied" category, this finding is overwhelmed when the dependent variable is dichotomized.

In terms of the paygrade of the military members to which these civilians are married, the spouses of all categories of enlisted personnel are significantly and substantially more likely to be dissatisfied relative to the spouses of more senior officers. For example, spouses of E1 – E4s were 41.4% more likely than the spouses of O4s and above to be dissatisfied. Spouses of E5 – E6s were 56.1% more likely and spouses of E7 – E9s were 62.5% more likely than the spouses of more senior officers to be dissatisfied with employment opportunities.

When separate models were estimated for men and women (Table 6.13), the difference between their coefficients for the number of moves made was significant at the 0.05 level. However, neither coefficient was a statistically significant predictor of dissatisfaction with job opportunities for either men or women. In addition to this geographic mobility variable, gender differences were also significant in the contribution that race and family variables make toward satisfaction/dissatisfaction with job opportunities. For example, black women are 49.7% more likely than White women to be dissatisfied. Black men, however, do not differ significantly from White men in terms of their dissatisfaction. Having a child less than six is related to a 73.3%

Table 6.13: Binomial Logistic Regression – Dissatisfaction with Job Opportunities by Gender

X	Men N = 1612				Women N = 8177			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.490	0.509			0.132	0.130		
Moves	0.128	0.074			-0.026	0.016		
Time Between Moves	-0.028	0.042			-0.039	0.014	**	0.962
Years Overseas	0.013	0.039			0.008	0.010		
Time on Station	-0.132	0.053	*	0.876	-0.052	0.011	***	0.949
Black	-0.216	0.215			0.403	0.063	***	1.497
Asian	-0.110	0.672			-0.083	0.124		
Born Overseas	1.004	0.439	*	2.729	0.221	0.103	*	1.247
Officer	-0.228	0.274			-0.326	0.066	***	0.722
Children	-0.177	0.118			-0.116	0.026	***	0.891
Child < 6	0.550	0.241	*	1.733	-0.197	0.055	***	0.821
Remarried	0.672	0.256	**	1.958	0.118	0.069		
Age	-0.015	0.017			0.003	0.005		
< High School	-0.257	0.672			-0.186	0.119		
Some College	0.197	0.217			0.225	0.053	***	1.253
College Degree	0.721	0.345	*	2.057	0.546	0.079	***	1.726
Graduate School	0.177	0.348			0.504	0.097	***	1.656
Veteran	0.224	0.223			0.128	0.075		
Reserves	-0.415	0.292			-0.372	0.220		
Navy	0.034	0.246			-0.212	0.061	***	0.809
Air Force	-0.131	0.216			-0.154	0.056	**	0.858
Marines	0.063	0.595			-0.013	0.091		
-2 Log Likelihood Fitted Model	708.925 ***				11427.712 ***			
Somers' D	0.184				0.239			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

increase in the likelihood of a man being dissatisfied with his employment opportunities, whereas women with a young child experience a decline of 17.9% in the likelihood of being dissatisfied. Those men who are remarried are almost twice as likely as men married for the first time to be dissatisfied with their employment opportunities. Remarriage was not a significant factor for women in this model.

While not significantly different from men, education and the branch of military service in which their husbands serve affect the likelihood that civilian wives will be dissatisfied with their employment opportunities. Those wives who are higher educated (i.e., have more than a high school diploma) are significantly more likely than those with a high school diploma or GED to be dissatisfied. Navy and Air Force wives are also more dissatisfied with their employment opportunities than Army wives. Again, this may be a function of the specific locations in which Navy and Air Force wives are located relative to Army wives.

Models estimated separately by race (Table 6.14) indicate that both Blacks and Asians differ significantly from Whites in terms of two geographic mobility variables: years lived overseas and time on station. For White spouses, each year spent overseas was associated with a 2.7% increase in the likelihood of being dissatisfied with their employment opportunities. For Black and Asian spouses, years spent overseas was not significant. Each year a spouse remains at his or her current geographic location is associated with a decrease in dissatisfaction, but this effect is stronger for minority groups than for Whites. Each year spent at the spouse's current location results in a 3.6% drop in the likelihood of White spouses being dissatisfied with job opportunities while the drop for Blacks and Asians is 15.1% and 15.6%, respectively.

Table 6.14: Binomial Logistic Regression – Dissatisfaction with Job Opportunities by Race

X	White N = 8612				Black N = 729				Asian N = 448			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.070	0.192	***		-1.586	0.424	***		0.567	0.943		
Moves	-0.031	0.017			0.046	0.045			0.038	0.063		
Time Between Moves	-0.035	0.015	*	0.966	-0.039	0.039			-0.039	0.048		
Years Overseas	0.026	0.011	*	1.027	-0.045	0.025			-0.056	0.034	*	
Time on Station	-0.036	0.011	**	0.964	-0.164	0.034	***	0.849	-0.169	0.048	***	0.844
Sex	-0.668	0.119	***	0.513	0.650	0.236	**	1.916	-0.761	0.736		
Born Overseas	0.197	0.116			-0.153	0.337			0.453	0.282		
Officer	-0.295	0.070	***	0.745	-0.260	0.220			-0.419	0.282		
Children	-0.133	0.029	***	0.875	-0.100	0.061			0.165	0.099		
Child < 6	-0.257	0.062	***	0.773	0.142	0.135			0.045	0.229		
Remarried	0.164	0.074	*	1.178	-0.029	0.187			0.335	0.315		
Age	-0.003	0.006			0.032	0.013	*	1.032	0.003	0.019		
<High School	-0.397	0.146	**	0.672	0.517	0.444			-0.147	0.266		
Some College	0.142	0.059	*	1.152	0.851	0.123	***	2.342	-0.500	0.255	*	0.606
College Degree	0.422	0.088	***	1.525	1.357	0.238	***	3.886	0.452	0.267		
Graduate School	0.471	0.107	***	1.601	0.834	0.226	***	2.302	-0.573	0.520		
Veteran	-0.037	0.080			0.959	0.182	***	2.609	0.826	0.678		
Reserves	-0.405	0.189	*	0.667	-0.054	0.557			0.149	1.874		
Navy	-0.161	0.067	*	0.851	-0.432	0.158	**	0.650	-0.407	0.249		
Air Force	-0.214	0.062	***	0.808	0.209	0.149			-0.098	0.225		
Marines	-0.070	0.103			0.417	0.233			-0.471	0.421		
-2 Log Likelihood Fitted Model	9311.629 ***				1975.975 ***				711.566 ***			
Somers' D	0.250				0.211				0.307			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

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Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Black and White spouses also differed significantly in terms of the relationship between gender and levels of dissatisfaction. White women were only about half as likely as White men to be dissatisfied with their employment opportunities. Conversely, Black women were nearly twice as likely as Black men to be dissatisfied.

Family-related variables, age, and education variables also showed significant race interaction effects. Having a child less than six was associated with a reduction in the likelihood of being dissatisfied for Whites, which differed significantly from the non-significant effect this factor had on Asian spouses. Being remarried is also associated with such a reduction in dissatisfaction for Whites, but the coefficient for Whites is significantly different from that of Blacks for this variable, although the Black spouse's coefficient is not significant. Older Black spouses are significantly more likely to be dissatisfied with their employment opportunities than younger Black spouses, while age was not at all significant for White spouses. For White spouses, education higher than a high school diploma or GED is associated with an increasing likelihood of being dissatisfied with their employment opportunities relative to high school graduates or those with GEDs. The effect of education for Blacks was in the same direction, but significantly more potent. While those White spouses with four-year degrees were about 1.5 times as likely as White high school graduates to be dissatisfied, Black spouses with college degrees were almost 4 times as likely to be dissatisfied, relative to Black high school graduates. On the other hand, the effect of education was reversed for Asian spouses with some college and with at least some graduate education, although the graduate school coefficient was not significant.

Looking at the military-related variables, racial differences between Black and White spouses are also evident. Black veterans, for example, are 2.6 times as likely as Black non-veterans to be dissatisfied with their job opportunities. Veteran status was not a significant predictor, though, of White spouse dissatisfaction. Relative to Army spouses, White Air Force spouses were significantly less likely, by 19.2%, to be dissatisfied. This differed significantly from the relationship between Black Air Force spouses and Army spouses, who did not differ significantly from one another.

No significant differences in the influence of geographic mobility on satisfaction/dissatisfaction with employment opportunities were found when the data were disaggregated by the officer/enlisted status of the military member to whom the civilian spouse was married (Table 6.15). The only significant difference between the spouses of enlisted personnel and the spouses of officers occurred in the difference between those serving in the National Guard/Reserves and those who were not. The spouses of enlisted personnel serving in a Guard/Reserve unit were only about half as likely as non-serving spouses to be dissatisfied with their employment opportunities. Reserve/Guard status did not, however, affect the dissatisfaction level of the spouses of officers.

Chapter Summary

The results in this chapter reveal that, all things considered, it is for men, Blacks, and spouses of enlisted personnel that financial necessity weighs most heavily in deciding whether or not to work outside the home. Gender and race differences in

Table 6.15: Binomial Logistic Regression – Dissatisfaction with Job Opportunities by Class

X	Enlisted N = 2744				Officer N = 7045			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.417	0.187	*		0.727	0.399		
Moves	-0.037	0.019			0.021	0.028		
Time Between Moves	-0.052	0.015	***	0.949	-0.015	0.028		
Years Overseas	0.014	0.011			-0.006	0.021		
Time on Station	-0.051	0.012	***	0.950	-0.078	0.026	**	0.925
Sex	-0.413	0.115	***	0.662	-0.478	0.223	*	0.620
Black	0.319	0.064	***	1.376	0.700	0.195	***	2.014
Asian	-0.090	0.132			-0.242	0.306		
Born Overseas	0.216	0.110	*	1.241	0.382	0.238		
Children	-0.101	0.029	***	0.904	-0.157	0.050	**	0.854
Child < 6	-0.141	0.061	*	0.868	-0.239	0.117	*	0.788
Remarried	0.121	0.074			0.214	0.153		
Age	0.008	0.006			-0.015	0.011		
< High School	-0.192	0.121			-0.273	0.521		
Some College	0.222	0.054	***	1.249	0.296	0.174		
College Degree	0.605	0.097	***	1.831	0.567	0.179	**	1.763
Graduate School	0.276	0.138	*	1.318	0.672	0.183	***	1.957
Veteran	0.168	0.078	*	1.183	0.006	0.166		
Reserves	-0.689	0.217	**	0.502	0.084	0.295		
Navy	-0.170	0.066	*	0.844	-0.316	0.129	*	0.729
Air Force	-0.161	0.062	**	0.851	-0.161	0.111		
Marines	0.006	0.100			-0.084	0.205		
-2 Log Likelihood Fitted Model	9484.351 ***				2669.770 ***			
Somers' D	0.236				0.263			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

this variable are especially interesting given that men and women, as well as all racial groups in the military, are paid primarily according to their rank. Since such gender and race differences occur net of the effects of rank, one might suggest that there is a difference in how civilian spouses view the adequacy of the military income of their military spouses. For example, civilian husbands may view their military wives' income as less adequate (relative to how civilian wives view the income of their military husbands) and, thus, be more likely to indicate that they are working for financial need.

If the decision is made to seek employment, spouses of military members may have some difficulty finding a job. Finding employment at the spouses' current geographic location is particularly difficult for civilian husbands, Asian wives, and spouses of junior and mid-grade enlisted personnel. Considering opportunities for employment more broadly, White men are generally more dissatisfied than White women and Blacks are more dissatisfied than Whites. Black women, however, are even more dissatisfied than Black men. Such women may be especially dissatisfied because they have experienced the disadvantage of being a double minority—being Black and a woman. Additionally, the spouses of enlisted personnel are more often dissatisfied than the spouses of officers—a finding that is not surprising given that spouses of enlisted personnel indicate that they must work more for financial need, but have more difficulty finding employment.

Geographic mobility, while not significant in aggregate models, appears to be a significant factor associated with working for financial necessity when the data are disaggregated and the slopes of the coefficients of these variables are allowed to vary

by race and class. For example, both the number of moves a spouse has made over the course of his or her marriage and the average length of time experienced between moves are negatively related to whether or not financial need is a major contributor to the employment decisions of the spouses of enlisted personnel. It may be that those spouses who have moved a greater number of times learn that they cannot rely on their income for financial necessity due to the number of interruptions in their employment. However, those spouses who have moved less frequently, as measured by the average time between moves, may have less financial need (i.e., due to the costs of relocating they do not incur relative to those who move more frequently), thus, limiting the necessity that they work for financial need. A similar explanation may explain the finding that increased time on station is associated with a decreased likelihood of working for need for Black spouses. Additionally, an increase in the number of years stationed overseas increases the likelihood for Whites that financial need will be a major contributor to the decision to work. This may be a result of the increased costs associated with living in some overseas locations.

Geographic mobility was also found to be significantly associated with the difficulty spouses experience in finding employment as well as their satisfaction with employment opportunities. Overall and net of other factors, being at their current location for a longer period of time was associated with decreased difficulty in finding employment and increased levels of satisfaction. The advantages of being at their current location longer were especially strong for Black spouses (for both difficulty finding employment and satisfaction levels) and spouses of officers (for difficulty finding employment). Experiencing a longer time between moves was also associated

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with positive outcomes: decreased difficulty for enlisted spouses in finding employment and increased satisfaction overall. Again, though, the positive influence of a longer time between moves was especially strong for minority spouses. In addition, Blacks who have moved a greater number of times indicate that finding employment is more difficult than those who have made fewer moves. Thus, having more time to find employment may make the process of searching for a job less difficult and, having been able to invest such time in a job search that may yield more desirable employment, this geographic stability may lead to higher levels of satisfaction with the opportunities one has. If minority spouses were to encounter difficulties searching for and finding employment above those encountered by White spouses, it is logical that minority spouses would receive more of a benefit from having additional time to overcome such obstacles.

The amount of time spent overseas was also associated with job-finding difficulty and level of satisfaction with employment opportunities—more time spent overseas generally related to more difficulty in finding a job and lower satisfaction for White spouses. However, being overseas appeared to be advantageous for Blacks in terms of decreased difficulty in finding employment. Such racial differences may be an indication that Blacks find less discrimination overseas when seeking employment, while Whites experience overseas locations as much more problematic—encountering barriers to employment (e.g., language) to which they are unaccustomed.

In addition to geographic mobility, the results of this chapter with regard to education are also noteworthy. Generally speaking, relative to those spouses with a high school education or GED, those spouses with higher levels of education generally

experienced a higher likelihood that working for financial need would greatly contribute to their decision to work, increased difficulty finding employment, and higher levels of dissatisfaction with their employment opportunities. Such results were typical of the aggregate models and, when the data were disaggregated, of women, Black and White spouses, and enlisted spouses. Those with higher levels of education may have higher aspirations for both their standard of living and the type of employment which they will accept. Thus, those with higher levels of education may perceive that they need to work more for financial need, while being less likely to accept employment not commensurate with their education, thus creating difficulties in finding employment and decreasing their satisfaction with their employment opportunities. It may also be the case that these education-related findings are driven by a lack of education-appropriate jobs for women in local labor markets surrounding military installations.

CHAPTER VII: EMPLOYMENT STATUS AND TYPE OF EMPLOYMENT

Having explored how geographic mobility is related to why civilian spouses work, the difficulty they have finding work, and how satisfied they are with their employment opportunities, I now focus more closely on whether or not these spouses seek and take employment, as well as the general type of employment they take. My first section addresses whether or not civilian spouses are currently employed. The second section of this chapter examines those who are employed more closely. In this second section, I explore the number of months the spouse has been with his or her current employer, the proportion of employed spouses currently in full-time jobs, and the proportion of spouses currently working in Federal civilian jobs. The third section of this chapter examines those who are not employed. More specifically, the likelihood of being unemployed versus not in the labor force is examined. In addition, for those not in the labor force, I explore the existence of discouraged workers.

The categorization of individuals into various employment status/type categories is based on responses to question 65 of the DoD survey, which asks respondents to "Mark ALL [categories/types] that apply." Individuals are traditionally divided into three mutually exclusive categories to describe their labor force participation: employed, unemployed, or not in the labor force. To ensure that individuals are only counted once (i.e., placed in only one of these three categories), a categorization system was developed based on that used by the Bureau of Labor Statistics (2001). In cases where the responses of individuals could potentially place them into multiple categories, priority was given to labor force activities over non-

labor force activities and employment over looking for employment (Bureau of Labor Statistics 2001). For example, someone who indicates being self-employed and either retired or in school would be counted as employed. Thus, anyone checking any of the following categories (regardless of what other categories were checked) were counted as employed: in Reserve or National Guard, Working full-time or part-time in Federal or other civilian job, self employed, and with a job, but temporarily not at work (e.g., because of illness, vacation, etc.). Those employed were then categorized into three non-exclusive subcategories for further analysis: those who are employed full-time, those who are employed in Federal civilian jobs, and those who are self-employed.

Individuals were counted as unemployed if they were not counted as employed and responded that they were "Unemployed, laid off, or looking for work." Individuals were classified as not in the labor force if they were not counted as either employed or unemployed. This category includes individuals whose responses were exclusively in one or more of the following categories: "Not looking for work but would like to work," "In school," "Retired," "A homemaker," "Unpaid worker (volunteer or family business)," or "Other." While the Bureau of Labor Statistics counts as employed those individuals who performed at least 15 hours of unpaid work in a family business, they do not count those whose unpaid work is for volunteer-type organizations such as religious or other charitable organizations (Bureau of Labor Statistics 2002). Because the type (family versus volunteer) and the amount of unpaid work cannot be distinguished with this data, I elected to classify unpaid workers as not in the labor force. Thus, my "employed" category may be better characterized as "employed in a paid job." Given this coding scheme, 55% of military spouses were

classified as employed, 10% were classified as unemployed, and 35% were not in the labor force (Table 7.1).

A subcategory of individuals not in the labor force was also developed: discouraged worker. The Bureau of Labor Statistics (2002: 4) defines a discouraged worker for the Current Population Survey as:

> Persons not in the labor force who want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but who are not currently looking because they believe there are no jobs available or there are none for which they would qualify.

Based on this definition, I counted as a discouraged worker respondents not in the labor force who indicated that they were not looking for work, but would like to work (Question 65), had at some time looked for a job at their current location (Question 72), and experienced at least one of the following: "Lack of jobs that use my training, experience, or skills," "No jobs available in an acceptable salary range," "Lack of necessary skills, training, or experience," "Available jobs too far away," or "Employers not looking to hire military spouses."

In order to explore the influence of geographic mobility on these variables, as well as the gender, race and class differences that occur net of other factors, I also estimate several regression models. The majority of the variables I examine in this chapter are dichotomous variables. For regression models in which the dependent variable is dichotomous, I estimate the models using binary logistic regression. For the continuous variable measuring the length of time a spouse has been employed with his or her current employer, I use ordinary least squares regression.

Table 7.1: Percentage of Civilian Spouses Employed, Unemployed, and Not in the Labor Force

	Employed[abde]		Unemployed[abde]		Not in Labor Force[abde]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.
Gender						
Men	72.5	27.4	17.3	23.2	10.2	18.5
Women	53.5	53.0	9.8	31.5	36.7	51.2
Race						
White	53.7	46.4	8.9	26.5	37.4	45.0
Black	60.0	74.5	16.2	56.0	23.8	64.7
Asian	52.6	56.7	9.3	33.0	38.1	55.1
Class						
Enlisted	55.5	80.0	11.3	51.0	33.2	75.8
Officer	51.7	26.7	5.9	12.6	42.3	26.4
Total	54.8	49.8	10.2	30.3	35.0	47.7

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

At least two regression models are estimated for each dependent variable: one in which only geographic mobility is considered and a second in which geographic mobility is considered in addition to a multitude of background factors, including gender, race, and class. The same background factors are held constant as in previous chapters with two exceptions. First, Reserve/National Guard service was not controlled for in examining employment. My coding of the data counts all those serving in the National Guard or Reserves as employed and, thus, it is not appropriate to include this as a predictor variable in the regression equations. Second, I have included an additional dummy variable which indicates whether or not a respondent has used military-sponsored spouse employment services. The inclusion of this variable allows for the examination of how the use of such services is related to a spouse's employment status and type.

Additional analysis was performed on the variable indicating whether or not a spouse was employed and, for those not employed, the variable indicating whether or not the spouse was unemployed (versus being not in the labor force) to evaluate how the influence of geographic mobility may differ by gender, race, and class. As in the previous chapter, such analysis was performed by disaggregating the data by sex, race, and class, and then estimating interaction models to test the statistical significance of the difference between the coefficients of men and women, Whites and Blacks, Whites and Asians, and the spouses of enlisted personnel and the spouses of officers. The separate models for the disaggregated data are presented in this chapter in their entirety, while the results of the interaction models are indicated in the appropriate tables by highlighting the coefficients that differ significantly.

Multicollinearity was examined in both logistic and OLS models by evaluating variance inflation factors associated with each coefficient generated using equivalent ordinary least squares regression models. All of the variance inflation factors fell under ten and the vast majority was under 2. Therefore, it appears that multicollinearity was not especially problematic in these models.

Employment

Overall, 55% of civilian spouses are employed. However, the results of the regression analysis in Table 7.2 indicate that gender, race, and class differences in whether or not a spouse is employed do exist, even when controlling for a multitude of relevant factors. The parameter estimates in the full model of employment status reveal that men are 77.5% more likely to be employed than women and that Black spouses are 22.1% more likely than White spouses to be employed. While the spouses of junior officers did not differ significantly from the spouses of more senior officers in terms of whether or not they were employed, the spouses of enlisted personnel did. Relative to spouses of military members in the paygrade of O-4 and above, the spouses of junior enlisted personnel were 39.1% more likely to be employed, the spouses of midgrade enlisted personnel were 73.9% more likely to work, and the spouses of senior enlisted personnel were 77.4% more likely to work.

Geographic mobility also appears to have a significant relationship with a spouse's current employment status. When geographic mobility is considered by itself in the regression model, the average length of time between moves a spouse has

Table 7.2: Binomial Logistic Regression – Employment

X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
		N = 11777				N = 11243		
Intercept	-0.297	0.048 ***		.	-0.119	0.225		.
Moves	0.002	0.009		1.002	0.019	0.015		1.019
Time Between Moves	0.022	0.011 *		1.022	0.034	0.013 *		1.034
Years Overseas	0.040	0.008 ***		1.041	0.030	0.010 **		1.031
Time on Station	0.146	0.011 ***		1.158	0.143	0.012 ***		1.154
Sex					-0.574	0.107 ***		0.563
Black					0.200	0.062 **		1.221
Asian					-0.103	0.229		0.902
Born Overseas					0.028	0.107		1.028
Born*Asian					-0.173	0.268		0.841
E1 - E4					0.330	0.111 **		1.391
E5 - E6					0.554	0.094 ***		1.739
E7 - E9					0.574	0.094 ***		1.774
O1 - O3					0.101	0.097		1.107
Children					-0.125	0.025 ***		0.883
Child < 6					-0.705	0.053 ***		0.494
Remarried					0.058	0.066		1.059
Age					-0.005	0.005		0.995
< High School					-0.418	0.109 ***		0.658
Some College					0.361	0.050 ***		1.435
College Degree					0.451	0.076 ***		1.569
Graduate School					0.958	0.096 ***		2.605
Employment Service					0.576	0.048 ***		1.779
Veteran					0.017	0.070		1.017
Navy					0.172	0.058 **		1.188
Air Force					0.159	0.054 **		1.173
Marines					0.322	0.088 ***		1.379
-2 Log Likelihood Fitted Model		14622.033 ***				12924.785 ***		
Somers' D		0.197				0.438		

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$
Odds ratios calculated only for those variables significant at the .05 level using Wald test

experienced, the number of years a spouse has spent overseas, and the amount of time

a spouse has been at his or her current duty location are all significantly related to

whether or not a spouse is employed. An increase in each of these factors is related to

an increase in the likelihood that the spouse will be employed. These relationships

hold even in the full multivariate regression model, when several other factors,

including gender, race, and class, are held constant. For every year increase in the

average time a spouse spends at a location over the history of their career as spouses

of military members, the likelihood of their being employed increases by 3.4%.

Similarly, the longer a spouse has been at his or her current location, the more likely it

is that he or she will be employed (15.4% per year). Somewhat unexpectedly, I also

find that for every year a spouse has been stationed overseas, his/her likelihood of

being employed increases by 3.1%.

When the data were disaggregated and separate models were estimated for men

and women (Table 7.3); Whites, Blacks, and Asians (Table 7.4); and the spouses of

enlisted personnel and the spouses of officers (Table 7.5), several significant

differences were found. In terms of how geographic mobility is related to spousal

employment, no significant differences were found between civilian husbands and

civilian wives. However, geographic mobility does seem to operate differently for

Black and Asian spouses in comparison to White spouses. For example, for every

year increase in the average time a White spouse experiences between geographic

relocations, that spouses' chances of being employed increase by 4.4%. The positive

effect for Asian spouses, however, is even more pronounced—increasing the

Table 7.3: Binomial Logistic Regression – Employment by Gender

X	Men N = 1736				Women N = 9507			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.058	0.517	*	.	-0.408	0.129	**	.
Moves	-0.082	0.071		0.921	0.025	0.015		1.025
Time Between Moves	0.007	0.045		1.007	0.038	0.014	**	1.039
Years Overseas	0.012	0.043		1.012	0.035	0.010	***	1.036
Time on Station	0.262	0.067	***	1.300	0.144	0.012	***	1.155
Black	0.198	0.227		1.220	0.191	0.064	**	1.211
Asian	0.265	0.682		1.303	-0.245	0.124	*	0.783
Born Overseas	-0.284	0.396		0.753	0.020	0.102		1.020
Officer	0.129	0.280		1.138	-0.498	0.064	***	0.608
Children	0.135	0.121		1.145	-0.131	0.025	***	0.878
Child < 6	-0.536	0.247	*	0.585	-0.715	0.054	***	0.489
Remarried	-0.060	0.250		0.942	0.089	0.068		1.093
Age	-0.031	0.017		0.969	0.000	0.005		1.000
< High School	-0.707	0.644		0.493	-0.413	0.110	***	0.661
Some College	0.209	0.224		1.232	0.372	0.051	***	1.450
College Degree	0.434	0.352		1.543	0.473	0.078	***	1.604
Graduate School	0.341	0.359		1.406	1.005	0.100	***	2.731
Employment Service	0.190	0.194		1.209	0.601	0.049	***	1.823
Veteran	0.158	0.228		1.171	0.037	0.073		1.038
Navy	0.455	0.256		1.576	0.179	0.060	**	1.196
Air Force	0.143	0.221		1.154	0.157	0.056	**	1.169
Marines	0.706	0.698		2.027	0.323	0.090	***	1.382
-2 Log Likelihood Fitted Model	684.636 **				12209.872 ***			
Somers' D	0.331				0.434			

Levels of significance (Wald Chi-Square): * $p \le .05$, ** $p \le .01$, *** $p \le .001$

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Table 7.4: Binomial Logistic Regression – Employment by Race

X	White N = 9957				Black N = 784				Asian N = 502			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.299	0.195		.	-0.403	0.416		.	2.234	1.063	*	.
Moves	0.017	0.017		1.017	0.018	0.040		1.019	0.105	0.065		1.110
Time Between Moves	0.043	0.015	**	1.044	-0.115	0.040	**	0.892	0.212	0.060	***	1.237
Years Overseas	0.040	0.011	***	1.041	0.034	0.025		1.034	-0.007	0.029		0.993
Time on Station	0.120	0.013	***	1.128	0.448	0.045	***	1.565	0.106	0.046	*	1.111
Sex	-0.496	0.124	***	0.609	-0.714	0.239	**	0.490	-1.763	0.828	*	0.172
Born Overseas	-0.051	0.115		0.950	0.126	0.340		1.134	0.018	0.282		1.019
Officer	-0.516	0.068	***	0.597	-0.238	0.222		0.788	-0.346	0.268		0.707
Children	-0.155	0.028	***	0.857	-0.005	0.063		0.995	-0.278	0.099	**	1.320
Child < 6	-0.770	0.060	***	0.463	-0.289	0.136	*	0.749	-1.191	0.238	***	0.304
Remarried	0.178	0.073	*	1.194	-0.768	0.184	***	0.464	0.168	0.316		1.183
Age	-0.003	0.006		0.997	0.007	0.012		1.007	-0.034	0.020		0.966
< High School	-0.543	0.132	***	0.581	1.173	0.408	**	3.232	-0.814	0.264	**	0.443
Some College	0.357	0.057	***	1.429	0.514	0.123	***	1.672	0.020	0.245		1.020
College Degree	0.541	0.087	***	1.717	0.214	0.222		1.239	-0.065	0.273		0.937
Graduate School	1.009	0.108	***	2.742	1.019	0.264	***	2.770	0.691	0.531		1.996
Employment Service	0.645	0.056	***	1.907	0.576	0.115	***	1.779	-0.182	0.213		0.834
Veteran	0.021	0.078		1.021	0.118	0.176		1.125	-0.645	0.691		0.525
Navy	0.137	0.066	*	1.147	0.721	0.163	***	2.055	-0.556	0.254	*	0.573
Air Force	0.121	0.061	*	1.129	0.756	0.162	***	2.130	-0.637	0.231	**	0.529
Marines	0.259	0.100	**	1.296	0.450	0.229	*	1.568	0.376	0.431		1.457
-2 Log Likelihood Fitted Model	9996.948 ***				1959.665 ***				734.745 ***			
Somers' D	0.435				0.419				0.352			

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

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Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Table 7.5: Binomial Logistic Regression – Employment by Class

X	Enlisted N = 3044				Officer N = 8199			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-0.012	0.189	.		0.436	0.403	.	
Moves	0.051	0.018	**	1.053	-0.017	0.027		0.984
Time Between Moves	0.050	0.015	***	1.052	0.006	0.028		1.006
Years Overseas	0.035	0.011	**	1.035	0.023	0.020		1.023
Time on Station	0.135	0.014	***	1.145	0.177	0.027	***	1.193
Sex	-0.556	0.120	***	0.574	-0.514	0.235	*	0.598
Black	0.200	0.065	**	1.221	0.332	0.205		1.393
Asian	-0.322	0.133	*	0.725	0.174	0.293		1.190
Born Overseas	0.062	0.110		1.064	-0.237	0.230		0.789
Children	-0.140	0.029	***	0.869	-0.049	0.047		0.952
Child < 6	-0.604	0.060	***	0.547	-1.104	0.114	***	0.331
Remarried	0.037	0.073		1.037	0.201	0.150		1.222
Age	0.001	0.006		1.001	-0.014	0.010		0.986
< High School	-0.417	0.111	***	0.659	-0.667	0.484		0.513
Some College	0.401	0.053	***	1.493	0.213	0.158		1.237
College Degree	0.487	0.098	***	1.627	0.416	0.164	*	1.516
Graduate School	0.669	0.147	***	1.953	1.071	0.173	***	2.918
Employment Service	-0.011	0.077		0.989	0.182	0.159		1.200
Veteran	0.505	0.053	***	1.657	0.847	0.115	***	2.332
Navy	0.209	0.065	**	1.232	0.149	0.126		1.161
Air Force	0.239	0.063	***	1.269	-0.109	0.109		0.897
Marines	0.368	0.099	***	1.445	0.168	0.199		1.183
-2 Log Likelihood Fitted Model	9988.252 ***				2888.729 ***			
Somers' D	0.397				0.462			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

likelihood that they are employed by 23.7% for each year. The relationship between the average time between moves and employment for Black spouses is reversed—each year increase in the average time between moves is associated with a 12.2% decrease in the likelihood that they will be employed. The negative impact of the average time between moves may be offset by the significantly greater effect, relative to White spouses, of the length of time spent at a Black spouse's current location. For each year that a White spouse has been at their current location, their likelihood of being employed increases by 12.8%. For Black spouses, the increase is 56.5% per year. Only one significant difference in the influence of geographic mobility was found between the spouses of officers and the spouses of enlisted personnel. While the number of moves did not significantly affect the spouses of officers, the spouses of enlisted personnel who moved a greater number of times were more likely to be employed than those who moved a fewer number of times.

While no gender differences in how geographic mobility affected whether or not a spouse was employed emerged, other gender differences did. For example, being the spouse of an officer was related to a significant decrease (39.2%) in the likelihood of being employed relative to the spouses of enlisted personnel for women, but was not significant at all for men. Additionally, the number of minor dependents living with the spouse was not a significant factor in the employment of civilian husbands, while, for civilian wives, each additional child reduced the likelihood of the wife being employed by 12.2%. Lastly, the use of military-sponsored employment services appears to be more beneficial to women than to men. Those women who used employment services were 82.3% more likely than those who did not to be

employed. For men, however, use of employment services was not significantly related to their employment. This result is especially interesting since a significantly higher percentage of men (43.8%) than women (30.6%) utilize these services. It may be that men and women do not use the same aspects of these programs. For example, men may utilize resume writing services, while women may use military-run services to make contact with potential employers.

While the coefficients of the education variables for men and women were not significantly different from one another, those of women reached levels of statistical significance while those of men did not. Relative to women with only a high school education or GED, women with a higher education, especially those with at least some graduate school, were much more likely to be employed. Other variables were also significant for women that were not significant for men including the average time between moves, the number of years spent overseas, race, class, number of children, use of employment services, and branch of service. This may be a function of the lower N-size for men as most of these coefficients are at least in the same direction. However, there is another potential explanation—civilian husbands, regardless of their background characteristics, are expected to work. Thus, variance in background characteristics explains little of the variance in employment.

Differences in the influence of factors other than mobility also emerged between Whites and minority spouses. Looking at family-related variables, I find that each child of a White spouse is associated with a 14.3% drop in the likelihood of employment and if at least one of those children is less than six years old, the likelihood of employment drops an additional 53.7%. Both of these factors are

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significantly different for Blacks, whose employment is generally less affected by children. Number of children is not a significant determinant of Black spouse employment and having a child less than six is associated with only a 25.1% drop in the likelihood of employment relative to those without a young child. Asians significantly differ from whites in terms of the effect of number of children. For Asian spouses, each child is actually associated with an increased likelihood of employment (by 32%). Whites and Blacks also differ in terms of the influence of remarriage. Whites who are remarried have a significantly higher likelihood of working than whites who are in their first marriage, while Blacks who are remarried are less than half as likely as first-time married Blacks to be employed.

Looking at the education variables, I find that White and Black spouses differ as to how those with less than a high school education compare with those who have attained such an education. For whites, those spouses in the lowest educational category are significantly less likely than their high school graduated counterparts to be employed. For Blacks, however, those with less than a high school education are more than three times as likely as high school graduates to be employed. Whites and Asians differ in terms of how college graduates compare with high school graduates. For Whites, college graduates are 71.7% more likely than high school graduates to be employed, while being a college graduate produced negative, non-significant results for Asian spouses.

Examining military-related variables, further racial differences appear. While using military-run employment services was associated with an increased likelihood of employment for White spouses, the use of such services was not a significant predictor

of Asians' employment. White Navy, Air Force, and Marine Corps spouses were all significantly more likely than comparable white Army spouses to be employed. For White spouses, the increase in the likelihood of being employed associated with being in a branch of service other than the Army ranged from 12.9% for Air Force spouses to 29.6% for Marine Corps spouses. The effect of being in the Navy or Air Force (versus the Army) for Black spouses was significantly stronger. Black Navy and Air Force spouses were more than twice as likely as Black Army spouses to be employed. The relationships between being a Navy or Air Force spouse and being employed was also significantly different for Asian spouses in comparison to White spouses. Asian spouses whose military members were in these services were actually less likely to be employed than Army spouses by a factor of just almost one half. As with other service effects encountered in this study, at least some of the variance between branches can likely be explained by the differential impact of labor market conditions in the various locations where the different services are concentrated.

Factors other than mobility also operated differently for the spouses of enlisted personnel and officers, although the differences are much fewer in number than that seen when the data were disaggregated by race. One such difference occurs when looking at the influence of having a child less than six years old. For both the spouses of officers and the spouses of enlisted personnel, the presence of such a child is related to a significant decrease in the likelihood of employment. The decrease is significantly greater for the spouses of officers (66.9%) than for the spouses of enlisted personnel (45.3%). Another significant class difference occurs in the influence of being in the Air Force versus being in the Army. While being married to

a military member in the Air Force is associated with an increase in the likelihood of being employed for enlisted spouses, this relationship does not appear to hold for the spouses of officers.

Employment Summary

Overall, results indicate that civilian husbands are more likely to be employed than civilian wives, Black spouses are more likely to be employed than White spouses, and enlisted spouses are more likely to work for pay than the spouses of more senior officers. Given that men are generally more likely to be employed than women, such a gender difference is not surprising. Also given that the statistics of women generally overwhelm those of men in the aggregate models (due to their higher N and larger data weight), the finding that Blacks are employed at a higher rate than Whites is also not surprising (given that Black women are generally employed at higher rates than White women). The difference between enlisted spouses and the spouses of officers may be explained by the finding in the previous chapter about the importance of working for financial need for enlisted spouses. If financial need is indeed an important contributor to the employment decisions of enlisted spouses, then one would expect that they would have a higher employment rate than those for whom financial need may not be as important.

The amount of time a spouse had been at his or her current location had an especially strong effect on employment, with a longer time on station being associated with a higher likelihood of employment. In other words, given more time at one location, more spouses are likely to find employment. This variable appeared to have

an especially strong effect for Black spouses, who may need more time to overcome the obstacles to employment for their racial group. Similarly, the greater amount of time spouses experience between moves, the more likely they are to be employed. It may be that some of those spouses who move most frequently no longer even look for employment. The effect of this variable is even more pronounced for Asian spouses. Black spouses, however, appear to suffer a disadvantage for having longer times between moves. This finding, however, is in contrast to and largely offset by the large positive relationship between time on station and employment for Blacks.

For enlisted spouses, the number of moves a spouse has made is also associated with an increase in the likelihood of being employed. It may be that enlisted spouses, having to work for need, become more proficient at finding employment with each relocation. For those enlisted spouses who have moved a greater number of times, there is also the possibility that some of those moves were to a location to which they were previously assigned. Thus, spouses who move back into a familiar area may be able to capitalize on any location-specific capital they had developed in their previous assignment to that location, including social networks. Alternatively, enlisted spouses who make more moves may incur more of a financial burden for their geographic mobility and are, thus, driven into the labor market out of financial necessity, despite their own desires about employment.

Detailed Analysis of Employed Spouses

Taking a closer look at those respondents who are employed, this section explores the length of time spouses have been employed by their current employer, whether or not they are currently employed in a full-time job, and whether or not they are currently employed by the Federal government. Overall, employed civilian spouses have worked for their current employer, on average, for 17 months. Almost 59% of these spouses work full-time and almost 19% work in Federal jobs (Table 7.6).

Using regression analysis, one can explore whether or not gender, race, and class differences exist when other variables that may also be related to employment status are controlled. Looking at the full models (Tables 7.7 – 7.9), I find that some of these differences persist, while others do not. For example, neither sex, race, nor class (as measured by the paygrade of the military member to which the civilian spouse is married) were significant predictors of the length of time one has been employed with their current employer. All three, however, have a significant relationship with whether or not a spouse is employed in a full-time job. Civilian wives are significantly less likely than civilian husbands (by 31.1%) to work in a full-time job. while Black spouses are significantly more likely than White spouses to be employed full-time. I also found that spouses of all paygrades were significantly more likely than spouses of O-4s and above to work in full-time jobs. Gender was not a significant predictor of the likelihood of being in a Federal job in the regression model, but race was. In particular, both Blacks and Asians (born in the US or to military parents overseas), were significantly more likely than White spouses to be employed by the Federal government. In fact, they were about twice as likely. In

Table 7.6: Detailed Employment Status and Type of Civilian Spouses Employed, Not Employed, and Not in the Labor Force

	Employed						Not Employed		Not in Labor Force	
	Months Employed by Current Employer[e]		Percentage Working Full-Time[abc]		Percentage Working in Federal Jobs[abd]		Percentage Unemployed[abde]		Percentage Discouraged Workers[bde]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Gender										
Men	17.2	13.5	69.7	28.2	23.0	25.8	63.0	29.7	13.0	17.3
Women	17.0	22.1	57.7	53.2	18.0	41.4	21.0	42.7	12.0	32.7
Race										
White	17.4	19.2	56.6	45.7	15.7	33.5	19.3	37.2	11.6	29.6
Black	16.3	29.3	65.2	68.9	28.8	65.5	40.4	81.4	17.2	64.3
Asian	15.6	22.1	63.7	54.1	18.9	44.1	19.7	45.7	7.7	30.3
Class										
Enlisted	16.7	32.3	59.4	77.0	18.7	61.2	25.4	72.5	13.4	57.3
Officer	18.5	11.0	55.5	25.9	17.4	19.8	12.3	18.1	7.6	14.7
Total	17.0	20.5	58.7	48.8	18.5	38.5	22.7	42.3	12.0	31.8

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

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Table 7.7: Ordinary Regression – Number of Months Employed

X	N = 6220 b	s.e.	p	N = 5927 b	s.e.	p
Intercept	5.251	0.548	***	-0.616	2.357	
Moves	1.103	0.107	***	0.171	0.163	
Time Between Moves	0.861	0.104	***	0.482	0.130	***
Years Overseas	-0.114	0.086		-0.194	0.095	*
Time on Station	1.679	0.078	***	1.536	0.081	***
Sex				-0.242	1.015	
Black				-0.615	0.632	
Asian				-3.496	2.420	
Born Overseas				2.019	1.117	
Born*Asian				-0.119	2.862	
E1 - E4				-1.878	1.234	
E5 - E6				0.202	1.015	
E7 - E9				1.232	0.984	
O1 - O3				-1.425	1.088	
Children				-1.097	0.263	***
Child < 6				-0.847	0.572	
Remarried				-1.128	0.698	
Age				0.460	0.055	***
< High School				-3.434	1.349	*
Some College				0.153	0.548	
College Degree				0.614	0.812	
Graduate School				-1.798	0.937	
Employment Service				-2.729	0.492	***
Veteran				-1.338	0.735	
Navy				-0.078	0.628	
Air Force				0.380	0.581	
Marines				1.524	0.966	
F		217.112	***		43.268	***
R^2		0.123			0.160	
Adj. R^2		0.122			0.156	

Levels of significance: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 7.8: Binomial Logistic Regression – Full-time Employment

X	N = 6376				N = 6080			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.174	0.065	**	.	-0.811	0.297	**	.
Moves	-0.011	0.013			0.038	0.021		
Time Between Moves	-0.013	0.013			0.009	0.017		
Years Overseas	0.023	0.010	*	1.024	0.017	0.012		
Time on Station	0.054	0.012	***	1.055	0.060	0.014	***	1.061
Sex					-0.373	0.129	**	0.689
Black					0.518	0.081	***	1.679
Asian					0.234	0.307		
Born Overseas					-0.028	0.139		
Born*Asian					0.079	0.361		
E1 - E4					0.785	0.154	***	2.193
E5 - E6					0.707	0.128	***	2.027
E7 - E9					0.604	0.124	***	1.829
O1 - O3					0.415	0.135	**	1.514
Children					-0.338	0.034	***	0.713
Child < 6					-0.379	0.071	***	0.685
Remarried					-0.077	0.087		
Age					0.019	0.007	**	1.019
< High School					-0.789	0.171	***	0.455
Some College					0.149	0.068	*	1.161
College Degree					0.371	0.102	***	1.449
Graduate School					0.645	0.122	***	1.906
Employment Service					0.328	0.062	***	1.388
Veteran					0.038	0.090		
Navy					0.294	0.079	***	1.342
Air Force					0.185	0.073	*	1.203
Marines					0.260	0.121	*	1.297
-2 Log Likelihood Fitted Model	7972.568 ***				7090.720 ***			
Somers' D	0.073				0.338			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Odds ratios calculated only for those variables significant at the .05 level using Wald test

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Table 7.9: Binomial Logistic Regression – Federal Employment

X	N = 6376				N = 6080			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-1.614	0.083	***	.	-2.725	0.375	***	.
Moves	0.025	0.015			-0.017	0.025		
Time Between Moves	0.014	0.016			-0.021	0.022		
Years Overseas	0.103	0.011	***	1.109	0.062	0.013	***	1.064
Time on Station	-0.041	0.016	**	0.960	-0.013	0.014		
Sex					-0.145	0.150		
Black					0.611	0.090	***	1.843
Asian					0.708	0.340	*	2.030
Born Overseas					-0.661	0.199	***	0.517
Born*Asian					-0.188	0.427		
E1 - E4					-0.075	0.198		
E5 - E6					0.214	0.161		
E7 - E9					0.344	0.152	*	1.411
O1 - O3					-0.089	0.176		
Children					-0.165	0.041	***	0.848
Child < 6					-0.197	0.092	*	0.821
Remarried					-0.061	0.111		
Age					0.033	0.009	***	1.034
< High School					0.562	0.200	**	1.754
Some College					0.117	0.088		
College Degree					0.260	0.127	*	1.297
Graduate School					0.237	0.145		
Employment Service					1.211	0.076	***	3.356
Veteran					-0.094	0.113		
Navy					-0.571	0.103	***	0.565
Air Force					-0.154	0.086		
Marines					-0.713	0.176	***	0.490
-2 Log Likelihood Fitted Model	5820.049 ***				4940.623 ***			
Somers' D	0.203				0.435			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Odds ratios calculated only for those variables significant at the .05 level using Wald test

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terms of class and Federal employment, only one difference reached the 0.05 level of significance—between the spouses of senior enlisted personnel and those of senior officers. The senior enlisted spouses were 41.1% more likely than the senior officers' spouses to be Federally employed.

Such regression analysis also allows for the exploration of how various components of geographic mobility are related to type of employment. When only geographic mobility is entered into the model, the number of moves one has made, the average time in between those moves, and the amount of time one has been at his or her current location are all positively related to the number of months that a civilian spouse has been employed by his or her current employer. However, once various controls are added, the number of moves made loses its significance and the number of years spent overseas becomes significant. Holding all else in the model constant, for every year increase in the average time between moves, length of current employment increased by almost half a month. For every year a spouse has been at his or her current location, length of current employment increases by more than a month and a half. The number of years spent overseas has a slightly negative effect on the length of current employment, with those who have spent more time overseas having less time with their current employer. While the influence of geographic mobility on length of employment may initially appear to be small, one must remember that the average length of employment for civilian spouses in this sample is less than 18 months.

Geographic mobility also has a significant relationship with whether or not an employed spouse is working full-time or not. When only geographic mobility is

considered in the model, an increase in the number of years spent overseas and in the number of years spent at a spouse's current location is associated with an increase in the likelihood of being employed full-time. However, the time spent overseas effect appears to be accounted for by other variables, once they are added in the full model. The time spent at a spouse's current geographic location, though, remains significant. For each additional year a spouse has been at his or her current location, the likelihood of being employed in a full-time position increases by 6.1%. Also, those employed civilian spouses who had used military-sponsored employment services at their current location were 38.8% more likely to be employed full-time than those who did not use such services.

As with the full-time employment variable, both the number of years spent overseas and the number of years spent at the spouse's current geographic location are related to whether or not employed spouses work for the Federal government. Those with more time on station are less likely to have a Federal job, while those who have spent more time overseas are more likely to be so employed. Once other variables are added to the model, the influence of time on station becomes non-significant. However, the influence of being stationed overseas persists. For each year a spouse has lived overseas, the likelihood of their being Federally employed increases by 6.4%. It is also interesting to note that veterans do not appear any more likely than non-veterans to hold a Federal job, despite being given preference in the hiring process.

Summary of Employed Spouses

Results of this section showed that civilian husbands were more likely to work in full-time occupations than civilian wives. This is not an unusual finding given that men traditionally work more hours per week in paid employment than women in the civilian sector. Black spouses were not only more likely to work full-time relative to White spouses, they were also more likely to be employed by the Federal government. Asians were also more likely to work for the Federal government than Whites. It may be that more minorities turn to the Federal government for employment because of the potential discrimination they face in the civilian sector. Additionally, relative to the spouses of more senior officers, the spouses of every other paygrade category are more likely to work in a full-time position. This finding is possibly related to the increased mobility required of more senior officers and the sacrifices which their spouses are often asked to make (i.e., giving up a career of their own) in order to assist the career of their military member. It may also be the case, though, that, because of the higher pay associated with more senior officers, their spouses do not need to work full-time as much as spouses of military personnel who are paid much less.

In terms of geographic mobility, the results in this section indicate that the amount of time a spouse has been at his/her current location is of great significance. Each additional year a spouse has been at that location is associated with an increase in the amount of time he/she has been working for their current employer and in the likelihood that they are working full-time. Having spent more time at their current location is also associated with a decrease in the likelihood of being Federally employed. It may be the case, however, that controlling for the various background

factors in this chapter, Federal employees simply move more often than non-Federal employees. Those spouses who have spent more time overseas, though, are more likely to be employed by the Federal government. It is likely that many civilian spouses seeking employment overseas turn first to the US government, rather than seek employment in a foreign economy. Having had some Federal employment experience may make it easier to obtain Federal employment upon returning to a stateside location.

Detailed Analysis of Those Spouses Not Employed

Looking more closely at those who are not employed provides an opportunity to explore employment status from a slightly different perspective. While neither those who are not in the labor force nor those who are unemployed are working, there is a significant distinction between the two: those who are unemployed are seeking employment but have not attained it, while those not in the labor force are not even looking. Of those not employed, almost 23% are unemployed while the remainder are out of the labor force (Table 7.6). This section explores those characteristics, including gender, race, class, and geographic mobility, that are associated with being in one of these categories versus the other.

The results of the regression models in Table 7.10 directly address the influence of such characteristics that occurs net of other factors also associated with employment status. Net of other factors in the model, women are 78.4% less likely to be unemployed (versus not in the labor force) than men and Black spouses are almost

Table 7.10: Binomial Logistic Regression – Unemployment versus Not in Labor Force

X	N = 5401				N = 5163			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-0.693	0.085	***	.	-0.817	0.429		.
Moves	-0.107	0.018	***	0.899	-0.058	0.028	*	0.944
Time Between Moves	-0.037	0.021			-0.045	0.028		
Years Overseas	0.053	0.015	***	1.054	0.005	0.019		
Time on Station	-0.147	0.025	***	0.864	-0.116	0.028	***	0.891
Sex					-1.531	0.194	***	0.216
Black					0.912	0.106	***	2.488
Asian					-0.068	0.401		
Born Overseas					0.000	0.201		
Born*Asian					0.164	0.476		
E1 - E4					1.006	0.224	***	2.735
E5 - E6					0.814	0.199	***	2.257
E7 - E9					1.001	0.200	***	2.721
O1 - O3					0.062	0.213		
Children					-0.179	0.049	***	0.836
Child < 6					-0.608	0.103	***	0.544
Remarried					0.043	0.120		
Age					0.022	0.009	*	1.023
< High School					-0.592	0.210	**	0.553
Some College					0.001	0.092		
College Degree					0.608	0.141	***	1.836
Graduate School					0.312	0.198		
Employment Service					1.129	0.084	***	3.093
Veteran					0.240	0.126		
Navy					0.047	0.110		
Air Force					-0.159	0.105		
Marines					0.387	0.155	*	1.473
-2 Log Likelihood Fitted Model	5147.876 ***				4092.330 ***			
Somers' D	0.277				0.624			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Odds ratios calculated only for those variables significant at the .05 level using Wald test

two and half times more likely than White spouses to fall into the unemployed category. The results of the regression analysis also indicate that the spouses of enlisted personnel are between 2.3 and 2.7 times as likely (depending on paygrade) to be unemployed compared to the spouses of the more senior officers.

A spouse's geographic mobility also appears to be related to whether a non-employed spouse is unemployed or not in the labor force at all. When only geographic mobility variables were entered into the equation, the number of moves a spouse had made and the number of years a spouse had been at his or her current location were negatively related to the likelihood that they would be unemployed versus not in the labor force, while the number of years spent overseas was positively related to this variable. Once other factors were entered into the model, the net effect of the years spent overseas became non-significant. The effect of the number of moves made by the spouse and the amount of time spent on station, however, remained significant. Those who had made more moves were less likely to fall into the unemployed category—their odds decreased 5.6% per move they had made. The longer spouses without jobs have been at their current geographic location, the less likely they are to be unemployed, and, thus, the more likely they are to be not in the labor force. The likelihood of being unemployed decreases 10.9% for each year the spouse is at their current location.

When separate regression models are estimated for men and women (Table 7.11) and an interaction model is used to test the significance of the differences between men's and women's coefficients, I find that men and women do not differ

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Table 7.11: Binomial Logistic Regression – Unemployment versus Not in Labor Force by Gender

X	Men N = 517				Women N = 4646			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	2.149	1.026	*	.	-1.640	0.239	***	.
Moves	-0.010	0.126			-0.080	0.029	**	0.924
Time Between Moves	-0.027	0.087			-0.061	0.030	*	0.941
Years Overseas	-0.050	0.085			0.007	0.019		
Time on Station	-0.158	0.122			-0.113	0.029	***	0.893
Black	0.760	0.512			0.919	0.109	***	2.506
Asian	1.960	3.174			0.086	0.221		
Born Overseas	0.808	1.142			-0.085	0.189		
Officer	-0.859	0.525			-0.887	0.132	***	0.412
Children	0.031	0.250			-0.203	0.050	***	0.816
Child < 6	-0.140	0.544			-0.631	0.105	***	0.532
Remarried	0.207	0.481			0.019	0.124		
Age	-0.041	0.027			0.035	0.010	***	1.036
< High School	-1.179	0.991			-0.622	0.217	**	0.537
Some College	-0.479	0.453			0.012	0.095		
College Degree	0.468	0.726			0.585	0.144	***	1.794
Graduate School	0.361	0.710			0.257	0.209		
Employment Service	1.637	0.414	***	5.141	1.100	0.087	***	3.005
Veteran	-0.375	0.471			0.334	0.130	*	1.397
Navy	0.151	0.530			-0.016	0.112		
Air Force	-0.038	0.441			-0.178	0.109		
Marines	-0.821	1.350			0.400	0.157	*	1.491
-2 Log Likelihood Fitted Model	184.263 ***				3873.647 ***			
Somers' D	0.496				0.572			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

significantly in terms of how geographic mobility affects whether non-working spouses are unemployed or not in the labor force. In fact, the only significant difference between men and women occurred in the age coefficient. While older women were more likely to be unemployed than younger women, age was not a significant factor in predicting whether or not a non-working civilian husband would be unemployed. Although not significantly different from the coefficient for men, women who had more children as well as young children were more likely to be out of the labor force than those with fewer or older children. Officers' wives were also especially likely to be out of the labor force relative to enlisted spouses.

When separate regression models were estimated by racial group (Table 7.12), a number of significant differences emerged. In terms of geographic mobility, Black spouses differed significantly from White spouses as to how the number of moves a spouse has made and the amount of time a spouse has spent at his or her current location is related to whether the spouse is unemployed or not in the labor force. While the coefficients are negative for both Whites and Blacks, the influence of these variables for Blacks is much greater. Every year on station decreases the likelihood that Blacks will be unemployed (versus not in the labor force) by 28.6%. The corresponding decrease for White spouses is 6.6%. Additionally, every move a Black spouse has made decreases the likelihood that he or she will be unemployed by 10.8%, while the influence of this variable for Whites was not significant.

In addition to geographic mobility, differences between Black and White spouses were also found in the influence of several other variables, most notably gender. While White civilian wives are 83% less likely than White civilian husbands

Table 7.12: Binomial Logistic Regression – Unemployment versus Not in Labor Force by Race

X	White N=4647 b	s.e.	p	Odds Ratio	Black N=268 b	s.e.	p	Odds Ratio	Asian N=248 b	s.e.	p	Odds Ratio
Intercept	0.681	0.361		.	-1.341	0.794		.	5.381	4.245		.
Moves	-0.027	0.032			-0.193	0.074	**	0.824	0.114	0.139		
Time Between Moves	-0.057	0.033			0.048	0.073			0.061	0.126		
Years Overseas	0.012	0.023			-0.070	0.055			-0.053	0.083		
Time on Station	-0.068	0.031	*	0.934	-0.337	0.081	***	0.714	-0.117	0.118		
Sex	-1.771	0.224	***	0.170	-0.650	0.464			-6.322	3.999		
Born Overseas	0.052	0.214			-1.566	0.711	*	0.209	1.166	0.718		
Officer	-0.938	0.145	***	0.392	-0.663	0.404			-1.479	0.671	*	0.228
Children	-0.250	0.061	***	0.779	0.119	0.106			-0.362	0.234		
Child < 6	-0.759	0.124	***	0.468	-0.043	0.245			-1.511	0.537	**	0.221
Remarried	0.359	0.137	**	1.432	-0.422	0.281			-0.221	0.746		
Age	0.001	0.011			0.083	0.022	***	1.086	-0.011	0.047		
< High School	-0.481	0.260			-0.223	0.724			-1.836	0.604	**	0.159
Some College	0.480	0.111	***	1.616	-1.088	0.201	***	0.337	-1.180	0.541	*	0.307
College Degree	0.762	0.176	***	2.142	0.745	0.371	*	2.106	0.143	0.527		
Graduate School	0.821	0.226	***	2.274	-0.629	0.471			-3.148	4.890		
Employment Service	1.191	0.102	***	3.289	0.914	0.191	***	2.494	2.082	0.421	***	8.018
Veteran	-0.033	0.152			1.272	0.288	***	3.566	0.405	1.128		
Navy	0.139	0.126			-0.748	0.314	*	0.473	0.179	0.554		
Air Force	-0.157	0.123			0.451	0.288			-0.944	0.501		
Marines	0.253	0.188			0.570	0.366			0.977	0.884		
-2 Log Likelihood Fitted Model	2916.444 ***				767.501 ***				210.219 ***			
Somers' D	0.622				0.414				0.725			

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

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Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

to be unemployed instead of not in the labor force, the difference between Black men and women, although in the same direction, was not significant. Differences in the coefficients of family-related variables were also significant. While having more children and having at least one child under six years old were both associated with a decreased likelihood of being unemployed versus not in the labor force for White spouses, neither significantly affected whether or not Black spouses were unemployed. Remarried white spouses were 43.2% more likely than non-remarried White spouses to be unemployed, but, again, the relationship between remarriage and unemployment for Black spouses was not significant.

In addition to family-related variables, racial differences were also found in education and military related variables. For example, relative to high school graduates, those White spouses with an education level higher than a high school diploma were significantly more likely to be unemployed than not in the labor force. While this was also the case for Black college graduates (relative to Black high school graduates), the relationship was reversed for those Blacks (and Asians) with some college—they were significantly less likely to be unemployed (i.e., more likely to be out of the labor force). Black spouses also differed significantly from White spouses in terms of the influence of veteran status. Black veterans were almost 3.6 times as likely as Black non-veterans to be unemployed, while veteran status was not significant for Whites. Unlike White spouses, Black spouses of Navy personnel (relative to spouses of Army personnel) were less likely to be unemployed than not in the labor force.

When the data for this variable was disaggregated by class and separate models run for the spouses of enlisted personnel and the spouses of officers (Table 7.13), no significant interactions were detected in terms of the influence of geographic mobility, gender, or race. The only two differences that emerged were in the influence of being born overseas and the influence of using military-run spousal employment services. Being born overseas was significantly associated with a higher likelihood of being unemployed versus not in the labor force for the spouses of officers, but not the spouses of enlisted personnel. Using employment services was associated with a larger increase in the likelihood of being unemployed versus being not in the labor force for the spouses of officers than for the spouses of enlisted personnel.

Some of those spouses who are not in the labor force, however, would work if the right job became available, but are not currently looking for work because they feel as if there are no jobs available for them. These are who I have defined previously as discouraged workers. About 12% of those not in the labor force are discouraged workers (Table 7.6). Looking only at those who are not in the labor force, one might ask what gender, race, and class differences there are in terms of who is or is not a discouraged worker, as well as whether or not geographic mobility plays any role in creating discouraged workers.

When several factors were controlled using a binary logistic regression model (Table 7.14), neither gender nor race was significantly related to being a discouraged worker. When comparing the spouses married to military members of various paygrades to those married to more senior officers, only the difference between the

Table 7.13: Binomial Logistic Regression – Unemployment versus Not in Labor Force by Class

X	Enlisted N = 1305				Officer N = 3858			
Intercept	0.197	0.342	.		-0.903	0.846	.	
Moves	-0.090	0.033	**	0.914	0.013	0.057		
Time Between Moves	-0.059	0.031			-0.030	0.067		
Years Overseas	0.012	0.020			-0.032	0.054		
Time on Station	-0.107	0.030	***	0.898	-0.214	0.078	**	0.808
Sex	-1.646	0.217	***	0.193	-1.153	0.464	*	0.316
Black	0.846	0.110	***	2.331	1.176	0.382	**	3.243
Asian	0.129	0.232			-1.084	0.676		
Born Overseas	-0.167	0.199			1.197	0.441	**	3.310
Children	-0.178	0.055	**	0.837	-0.147	0.109		
Child < 6	-0.568	0.113	***	0.567	-0.972	0.259	***	0.378
Remarried	-0.062	0.130			0.282	0.320		
Age	0.030	0.010	**	1.031	0.001	0.020		
< High School	-0.600	0.214	**	0.549	-0.338	1.010		
Some College	-0.018	0.096			0.071	0.353		
College Degree	0.893	0.169	***	2.441	0.277	0.368		
Graduate School	-0.177	0.289			0.627	0.386		
Employment Service	1.015	0.091	***	2.760	1.908	0.223	***	6.742
Veteran	0.202	0.136			0.438	0.333		
Navy	-0.040	0.118			0.120	0.292		
Air Force	-0.271	0.118	*	0.763	0.188	0.246		
Marines	0.402	0.167	*	1.495	0.034	0.471		
-2 Log Likelihood Fitted Model	3371.108 ***				676.186 ***			
Somers' D	0.566				0.659			

Levels of significance (Wald Chi-Square): * $p \le .05$, ** $p \le .01$, *** $p \le .001$

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Table 7.14: Binomial Logistic Regression – Discouraged Workers

X	N = 4487				N = 4299			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-1.958	0.1238	***	.	-2.194	0.676	**	.
Moves	-0.085	0.026	**	0.919	0.002	0.040		
Time Between Moves	-0.003	0.026			0.035	0.033		
Years Overseas	0.052	0.020	**	1.054	0.056	0.023	*	1.058
Time on Station	0.027	0.023			0.033	0.027		
Sex					-0.321	0.379		
Black					0.080	0.176		
Asian					-0.325	0.518		
Born Overseas					-0.179	0.279		
Born*Asian					0.038	0.645		
E1 - E4					0.388	0.302		
E5 - E6					0.446	0.264		
E7 - E9					0.576	0.266	*	1.780
O1 - O3					0.116	0.268		
Children					-0.090	0.065		
Child < 6					-0.071	0.144		
Remarried					0.181	0.165		
Age					-0.016	0.014		
< High School					-0.262	0.253		
Some College					-0.124	0.128		
College Degree					0.241	0.205		
Graduate School					0.257	0.276		
Employment Service					1.199	0.121	***	3.318
Veteran					0.137	0.182		
Navy					0.208	0.152		
Air Force					0.212	0.141		
Marines					0.510	0.219	*	1.664
-2 Log Likelihood Fitted Model	2685.951 **				2428.484 ***			
Somers' D	0.082				0.340			

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Odds ratios calculated only for those variables significant at the .05 level using Wald test

spouses of senior enlisted personnel and of more senior officers reached significance. Spouses of E-7s to E-9s were 78% more likely to be discouraged workers than spouses of O-4s and above.

Geographic mobility also appeared to have some relationship with whether or not a spouse who was not in the labor force was a discouraged worker. When geographic mobility variables were the only variables entered into the regression equation, the number of moves a spouse had made was negatively related to the likelihood that the spouse would be a discouraged worker. However, the effect of the number of moves is accounted for by other variables in the full model, as its coefficient fails to reach significance when other variables are held constant. The influence of the number years a spouse has lived overseas remains significant and relatively constant, though, across both models. According to the results of the full model, each year that a spouse has lived at an overseas location increases the likelihood that a spouse who is not in the labor force will be a discouraged worker by 5.8%.

Summary of Spouses Not Employed

Examining those spouses who are not employed in more detail, I find that civilian wives are generally more likely than civilian husbands to be out of the labor force, although this difference is only significant for White spouses when the data are disaggregated by race. Thus, while White civilian wives are more likely to be out of the labor force relative to White civilian husbands, minority husbands and wives do not differ significantly as to whether or not they are unemployed or not in the labor

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force. Childcare (i.e., staying home to care for children) seems to play a role for White spouses that is not at all significant for Black spouses and only significant in the case of young children for Asian spouses. In addition, results indicate that Black spouses, overall, are much more likely to be unemployed and, thus, still in the labor force, than White spouses. In terms of class, enlisted spouses were much more likely to be unemployed than the spouses of more senior officers. This finding seems to support, as others have, the persistence of the role of the senior officer's wife—one who sacrifices her career or employment for the sake of her military husband's career. I use the term "wife" here instead of "spouse" because the officer/enlisted difference did not reach statistical significance among civilian husbands when the data were disaggregated by gender.

Geographic mobility is also related to whether or not a spouse who is not employed is either unemployed or not in the labor force. Basically, the longer a spouse without a job has been at his or her current geographic location, the less likely he/she is to be employed, and, thus, the more likely he/she is to be out of the labor force. This effect is significantly stronger for Black spouses relative to White spouses. One possible explanation for this finding is that some spouses, as they approach the end of their stay at a particular location, may have left their current job and have not yet begun looking for a new job at their next assignment, thus, being classified as not in the labor force. Therefore, this finding may be more indicative of what happens at the end of an assignment rather than what happens as the length of time a spouse has been at an assignment increases. The number of moves a spouse has made is also significant for Black spouses with more moves being associated with a higher

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likelihood of being out of the labor force. Those Black spouses who have moved a greater number of times may eventually give up looking for work and drop out of the labor force.

Chapter Summary

The results of the analysis conducted in this chapter reveal significant gender, race, and class differences in both employment status and in the influence of geographic mobility on employment status. Looking at whether or not a spouse is employed, being Black, a man, and the spouse of an enlisted member were all associated with an increased likelihood that one would be employed. Gender and racial differences generally conform to patterns found more broadly in American society, while the higher employment of enlisted spouses is likely to be driven by financial need.

Geographic mobility also appeared to play an important role in predicting whether or not a spouse would be employed, especially the amount of time a spouse had been at his or her current location. In every model, no matter how the data were disaggregated, the longer the spouse had been at his/her current assignment, the higher the likelihood that he/she would be employed. This variable appeared to have an especially strong influence upon Black spouses. These findings suggest that there is a job-search period at each assignment and, given that Blacks must often overcome difficulties in finding employment that Whites do not have to address (i.e., racial discrimination), additional time to overcome such obstacles is especially beneficial for

Blacks. The number of years spent overseas was also positively associated with being employed, although this result was not significant across all subgroups.

Other geographic mobility variables appear to operate differently for different subgroups in terms of their influence on whether or not a spouse is employed. For example, an increase in the average time a spouse experiences between moves that he or she has made is generally associated with an increase in the likelihood that the spouse will be employed. This is not true for Black spouses, however, who appear to suffer an employment penalty for having spent a longer average amount of time at previous assignments. For Black spouses, this finding is in contrast to and largely offset by the positive importance of being at their current assignment for a longer period of time. The number of moves a spouse has made also appears to differentially affect the spouses of officers and the spouses of enlisted personnel. While this variable is not a significant predictor of whether or not officers' spouses are employed, it is for enlisted spouses. Those enlisted spouses who have made more moves are actually more likely to be employed. It may be that enlisted spouses become more proficient at finding employment with every move or that those spouses who make the most moves may move back into areas in which they have already been stationed, allowing them to take advantage of any location-specific capital they had earned in their previous stay. Alternatively, it may be that enlisted spouses who make more moves incur more of a financial burden for their geographic mobility and are, thus, driven into the labor market out of financial necessity, despite their own desires about employment.

Once employed, men are more likely to find themselves in full-time employment than women, net of other factors in this analysis. Employed Black spouses are more likely than White spouses to be both in full-time occupations and in a Federal job. Asians were also more likely than Whites to be employed by the Federal government. Minorities may seek employment in Federal government more often than Whites due to the discrimination protection policies of the Federal government and the potential obstacles they would face in the civilian sector. Enlisted spouses who are employed are also much more likely than the spouses of officers to be employed full-time. Enlisted spouses, through financial need, may simply need to work full-time more often than the spouses of officers.

One's geographic mobility is also an important factor in predicting how long a person has been with their current employer and whether or not they are employed full-time or by the Federal government. Net of other factors, the longer a spouse has been at his or her current assignment, the longer he/she will have been employed by the same employer and the more likely it is that he/she will be employed full-time. In addition, those who have experienced more lengthy periods in between the times they have had to move across their "career" as spouses of military members tend to have been employed longer by their current employer. Those spouses who have spent more time overseas tend to be employed with their current employer for a shorter period of time, but are more likely to be employed in a Federal job. This may be due to the willingness of spouses to apply for Federal employment overseas (versus employment in a foreign labor market) and the potential advantages such employment has in gaining future Federal employment.

Looking at those who are not employed, Blacks are generally more likely to be unemployed, rather than not in the labor force, than Whites. While White men are also more likely to be unemployed than White women, the same gender difference does not emerge among Black spouses. Staying home to take care of children appears to play a significant role in these differences. The spouses of enlisted personnel were also much more likely to fall into the unemployed category than the spouses of more senior officers. Financially, the spouses of officers would be more able to drop out of the labor force completely, but may also be fulfilling the tradition role of the officer's wife.

In terms of geographic mobility, net of other factors considered in this analysis, those who were on station longer tended to be less likely to be unemployed and more likely to be out of the labor force. This time on station effect is especially strong for Black spouses. The influence of time on station, though, may be more indicative of what happens at the end of a spouse's stay at one location (i.e., dropping out of the labor force in anticipation of a move) rather than what happens as a result of the accumulation of time at a particular location. Black spouses also appear to be more affected by the number of moves they have made previously than White spouses. For Black spouses, having experienced a greater number of moves is associated with an increased likelihood of being out of the labor force instead of being unemployed. Those Black spouses who have made a greater number of moves may eventually give up looking for work and drop out of the labor force.

Some of those who are counted as not in the labor force may have worked, or at least looked for work, if they had felt there were jobs available for which they

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would qualify. These are the discouraged workers. Net of all the factors considered, though, there are no gender or racial differences (between minority and White spouses) in the likelihood that a spouse who is not in the labor force will be a discouraged worker. Senior enlisted spouses who are not in the labor force, however, do appear to be more likely than the spouses of senior officers to fall into this category. The spouses of more senior officers may be more likely to actively choose to drop out of the labor force, while the spouses of senior enlisted personnel may be discouraged from seeking employment by the perception that appropriate jobs are not available for them. The only geographic mobility variable that was associated with whether or not a spouse not in the labor force could be counted as a discouraged worker is the number of years the spouse has lived overseas—the more time spent overseas, the more likely the spouse is to be a discouraged worker. This is likely related to the lack of available jobs overseas.

CHAPTER VIII: EARNINGS

Even if a spouse does find employment, one must question whether or not geographic mobility has affected that spouse's ability to earn income. Are those who are more mobile less compensated for their work and are there gender, race, and class differences? These are questions for which the evidence in this chapter will suggest some possible answers. Unlike previous chapters, which have focused on multiple dependent variables, this chapter focuses on earnings alone.

Earnings is defined as one's pretax income from paid civilian employment in 1991. It is calculated for those who worked at least one week in 1991 and who had positive earnings. This variable is topcoded at $100,000. Because the distribution of earnings tends to be irregularly shaped (i.e., non-normally distributed), this variable was transformed by taking its natural logarithm. While the non-transformed variable has a skewness of 2.569 and a kurtosis of 10.623 (a perfect normally distributed variable has a skewness and kurtosis value of 0), the transformed variable's skewness is -1.010 and has a kurtosis value of 1.601—more closely approximating a normal distribution.

Regression analysis was conducted using the transformed earnings variable as the dependent variable in OLS regression in order to examine the influence of geographic mobility on earnings as well as gender, race, and class differences that might exist net of other factors in the regression models. The data were then disaggregated by gender, race, and officer/enlisted status of the military member to which the civilian spouse is married, separate models were estimated for each group,

and interaction models were estimated to test the significance of the differences between the coefficients of each group. As in other chapters, the interaction models themselves are not presented, but their results are indicated in the appropriate tables as well as in the text.

Further analysis was also conducted on a more restricted group of spouses, those who had worked for a full year, defined as working fifty or more weeks, in 1991. Examining this subgroup allows for the study of the influence of geographic mobility on those who, at least in 1991, had been steadily employed. Although it is traditional in studying employment-related topics to examine full-time, year round workers (instead of just year-round workers), there is no information in this data set that indicates the usual type of employment (full-time or part-time) of these spouses in 1991[*]. Therefore, only the year-round criterion was used to select this subgroup. For these year-round workers, regression analysis was also conducted using both a geographic mobility only model as well as a fuller model that controls for a variety of related factors. The data were not disaggregated further for this subgroup. The means and standard deviations associated with both the transformed and non-transformed measure of earnings for this more restricted group as well as the broader sample can be found in Table 8.1.

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[*] Only information on a respondent's current full-time or part-time employment status is included in this data. As one's current employment situation, especially whether or not one is employed or employed full-time, is significantly related to geographic mobility (especially time on station) and approximately 40% of the respondents in my sample have made a move in the last 12 months, I decided that it was not appropriate to make the assumption that one's current employment situation is typical of one's employment in 1991.

Table 8.1: 1991 Earnings of Civilian Spouses

| | All Workers | | | | Year-Round Workers [abcde] | | | |
| | Earnings[f] | | Ln(Earnings) [abe] | | Earnings[f] | | Ln(Earnings) [abcde] | |
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Gender								
Men	17517	8878	9.383	0.612	22869	8312	9.855	0.370
Women	11863	13167	8.822	1.353	17938	12974	9.577	0.818
Race								
White	12029	11606	8.824	1.173	18372	11552	9.594	0.663
Black	13196	19046	8.998	1.729	18904	15233	9.695	0.761
Asian	12709	12704	8.966	1.421	17555	11751	9.396	1.559
Class								
Enlisted	11417	18313	8.802	1.938	16983	16827	9.537	1.116
Officer	16189	7905	9.144	0.660	24819	7820	9.903	0.385
Total	12286	12488	8.864	1.245	18435	11959	9.605	0.728

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer
[f] Differences between subgroups were only evaluated for ln(earnings) due to the non-normal (i.e., highly skewed) distribution of earnings

Because the natural logarithm of earnings is used, the interpretation of this variable is not as straight-forward as when using a non-transformed variable. The differences between the means of the transformed variables of the various groups can be interpreted as the approximate percentage difference in earnings between the comparison groups by using the following equation (Mehay and Hirsch 1996: 206; Thornton and Innes 1989: 444):

Percentage Differential = [EXP(Logarithmic Differential) – 1] x 100

A similar equation can be used convert the coefficients in the regression equations to approximate percentage changes/differences in earnings associated with a change in the independent variable (Mehay and Hirsch 1996: 206; Thornton and Innes 1989: 444):

Percentage Differential = [EXP(Regression Coefficient) – 1] x 100

The variables included in the regression analysis in this chapter are similar to those included in the employment chapter with three exceptions. First, Reserve/National Guard status is reentered into the model while the use of employment services at their current location is removed. Second, and more importantly, a spouse's time on station is not considered in the earnings models. This variable is excluded from analysis largely based on the timing of the administration of the survey. The 1992 DoD survey was fielded between May and October of 1992

(Hay, et. al. 1995). However, earnings information is requested from 1991. Thus, several of the spouses were likely to have been at a previous assignment during their 1991 employment. In fact, about 40% of the spouses in my sample had been at their current geographic location for a year or less. Going back to the beginning of 1991 (between 17 and 21 months from the time the survey was fielded), we would find that between 47% and 53% of the spouses in this sample were at a different geographic location than where they were at the time of the survey. Thus, for those who were employed (or lived) at a previous location in 1991, the time on station more appropriate to use in this analysis would be the amount of time that they were at their previous geographic location. This information is not available in this data set. Since it would not be appropriate to attempt to relate a spouse's earnings from employment at a previous assignment with the length of time the spouse has been at his or current assignment, not knowing how long he or she was at his or her previous assignment, time on station will not be used in the earnings models.

A third change to the regression variables is the addition of an age squared variable to account for the curvilinear relationship between age and earnings. Because of the collinearity that often occurs between an independent variable and its square, such variables are often centered (i.e., by subtracting their mean) to reduce such collinearity. However, in the earnings models used in this chapter, the collinearity between age and its square had little impact (based on an analysis of models excluding the squared term and an examination of variance inflation factors associated with those models). Therefore, uncentered values of age are used. Collinearity among other variables was also evaluated using variance inflation factors in each of the

models. Almost all of the variance inflation factors were less than 2 and all were less than 10. Therefore, multicollinearity does not appear to be problematic in this analysis.

Using these data, though, one must be cautious in interpreting earnings differences as hourly wage differences. That is, just because one spouse is paid more than another spouse for working the same number of weeks a year does not mean that the higher paid spouse was paid at a higher rate. Earnings differences could occur because of differences in the usual number of hours worked per week in 1991. Thus, any differences in wages may be due more to a differential in hours worked than the rates paid for each hour of work. As there is no information in this data set on the usual number of hours worked per week in 1991, these two components of earnings cannot be separated.

Earnings – Full Sample

The results of the regression analysis in Table 8.2 indicate that, net of the influence of the other variables in the model, women earn 17.6% less than men, while Black spouses earn 24.9% more than White spouses. Earnings differences between the spouses of more senior officers and those in other paygrades are also present, with the earnings advantage going to the spouses of more senior officers. While the coefficients of all paygrades are in the same direction, only those of spouses of E1 – E4s and E7 – E9s reach significance. In these two cases, the enlisted spouses earn 12.5% and 15.4% less than the spouses of senior officers, respectively.

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Table 8.2: Ordinary Regression - Ln(Earnings in 1991)

X	Geographic Mobility N = 6881			Full N = 6627		
	b	s.e.	p	b	s.e.	p
Intercept	8.581	0.035	***	6.438	0.188	***
Moves	0.024	0.007	***	-0.020	0.008	*
Time Between Moves	0.056	0.007	***	0.013	0.006	*
Years Overseas	0.018	0.006	**	0.006	0.005	
Sex				-0.193	0.050	***
Black				0.222	0.030	***
Asian				-0.057	0.113	
Born Overseas				0.037	0.056	
Born*Asian				0.096	0.138	
E1 - E4				-0.134	0.060	*
E5 - E6				-0.084	0.051	
E7 - E9				-0.167	0.050	***
O1 - O3				-0.006	0.055	
Children				-0.109	0.013	***
Child < 6				-0.019	0.028	
Remarried				0.017	0.034	
Age				0.047	0.011	***
Age Squared				-0.0005	0.0002	**
Weeks Worked 1991				0.047	0.001	***
< High School				-0.075	0.065	
Some College				0.058	0.026	*
College Degree				0.304	0.039	***
Graduate School				0.519	0.046	***
Veteran				0.099	0.036	**
Reserves				0.117	0.089	
Navy				-0.016	0.030	
Air Force				-0.030	0.028	
Marines				-0.042	0.045	
F		32.238	***		225.710	***
R^2		0.014			0.48	
Adj. R^2		0.013			0.48	

Levels of significance: * $p \le .05$, ** $p \le .01$, *** $p \le .001$

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Geographic mobility, as measured by the number of moves a spouse has made, the average time they have experienced between moves, and the number of years they have spent overseas, are all related to earnings when entered into the regression model without other independent variables. An increase in each was associated with an increase in earnings. When other factors were controlled, however, the number of years spent overseas becomes a non-significant predictor. Net of other factors, though, each move a spouse makes during his or her marriage to a military member is associated with a loss of 2% of their annual earnings. Furthermore, each additional year their average length of stay at an assignment increases, these spouses experience an increase in their earnings of 1.3%.

In addition to geographic mobility, other factors were also found to be significantly related to earnings. For example, those spouses with more children tend to earn less than those with less children, those with more than a high school education earn more than those with only a high school education, and earnings tend to increase with age, but the value of age decreases over time. Most of these findings are well documented in the existing literature and will not be discussed further. One finding, though, not often discussed in the extant literature that is noteworthy is that spouses who are military veterans earn a 10.4% premium over non-veteran spouses.

When the data are disaggregated by gender, race, and the officer/enlisted status of the military member to which the civilian spouse is married (Tables 8.3 – 8.5); important differences in how geographic mobility, race, gender, and other factors influence earnings emerge. In terms of geographic mobility, the number of moves one

Table 8.3: Ordinary Regression - Ln(Earnings in 1991) by Gender

X	Men N = 1243			Women N = 5384		
	b	s.e.	p	b	s.e.	p
Intercept	7.038	0.289	***	6.038	0.187	***
Moves	-0.017	0.017		-0.017	0.009	*
Time Between Moves	0.001	0.009		0.015	0.007	*
Years Overseas	0.014	0.010		0.005	0.005	
Black	-0.021	0.052		0.250	0.034	***
Asian	-0.032	0.153		0.010	0.073	
Born Overseas	0.048	0.099		0.049	0.058	
Officer	0.167	0.063	**	0.112	0.037	**
Children	0.046	0.027		-0.119	0.015	***
Child < 6	-0.213	0.056	***	-0.001	0.031	
Remarried	0.066	0.058		0.023	0.038	
Age	0.020	0.017		0.052	0.012	***
Age Squared	-0.0002	0.0002		-0.0006	0.0002	**
Weeks Worked 1991	0.045	0.001	***	0.048	0.001	***
< High School	-0.483	0.167	**	-0.037	0.071	
Some College	-0.067	0.053		0.066	0.029	*
College Degree	0.124	0.076		0.316	0.044	***
Graduate School	0.282	0.082	***	0.536	0.051	***
Veteran	0.016	0.051		0.114	0.042	**
Reserves	0.134	0.073		0.149	0.122	
Navy	0.047	0.056		-0.015	0.034	
Air Force	-0.039	0.051		-0.024	0.031	
Marines	0.241	0.133		-0.049	0.049	
F		52.963	***		219.276	***
R^2		0.489			0.474	
Adj. R^2		0.479			0.472	

Levels of significance: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted sex with each X variable.

Table 8.4: Ordinary Regression - Ln(Earnings in 1991) by Race

X	White N = 5823			Black N = 552			Asian N = 251		
	b	s.e.	p	b	s.e.	p	b	s.e.	p
Intercept	6.198	0.190	***	7.136	0.489	***	5.285	1.644	**
Moves	-0.024	0.008	**	-0.047	0.031		0.143	0.054	**
Time Between Moves	0.004	0.006		0.004	0.025		0.137	0.033	***
Years Overseas	0.008	0.005	***	-0.009	0.016		0.032	0.029	
Sex	-0.262	0.052	***	0.041	0.158		-0.818	0.492	
Born Overseas	-0.030	0.056		0.259	0.210		0.240	0.211	
Officer	0.115	0.033	***	0.117	0.151		0.314	0.230	
Children	-0.118	0.014	***	-0.061	0.043		-0.089	0.083	
Child <6	0.011	0.029		-0.081	0.097		-0.190	0.210	
Remarried	0.063	0.034		-0.415	0.128	**	0.456	0.285	*
Age	0.054	0.012	***	0.022	0.029		0.141	0.095	
Age Squared	-0.0005	0.0002	**	-0.0002	0.0005		-0.0027	0.0013	*
Weeks Worked 1991	0.050	0.001	***	0.039	0.003	***	0.039	0.005	***
< High School	-0.123	0.069		0.474	0.292		-0.028	0.254	
Some College	0.046	0.027		0.131	0.090		-0.084	0.214	
College Degree	0.283	0.041	***	0.231	0.152		0.491	0.230	*
Graduate School	0.432	0.047	***	0.798	0.153	***	0.618	0.438	
Veteran	0.044	0.037		0.270	0.117	*	-0.121	0.491	
Reserves	0.158	0.087		0.041	0.369		-0.066	1.015	
Navy	-0.036	0.031		-0.072	0.114		0.231	0.201	
Air Force	-0.074	0.029	**	0.175	0.102		0.347	0.203	
Marines	-0.059	0.046		-0.136	0.162		0.273	0.302	
F	296.707		***	19.004		***	5.883		***
R²	0.518			0.430			0.350		
Adj. R²	0.516			0.407			0.290		

Levels of significance: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

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Shaded rows indicate that the difference in the coefficients for that X variable between that racial group and Whites is significant at the 0.05 level of significance using an interaction model (not shown) which interacted race with each X variable.

Table 8.5: Ordinary Regression - Ln(Earnings in 1991) by Class

X	Enlisted Spouses N = 1953			Officer Spouses N = 4673		
	b	**s.e.**	**p**	**b**	**s.e.**	**p**
Intercept	6.274	0.321	***	6.374	0.240	***
Moves	-0.021	0.015		-0.016	0.008	*
Time Between Moves	0.015	0.011		0.004	0.007	
Years Overseas	0.008	0.009		-0.005	0.006	
Sex	-0.198	0.093	*	-0.201	0.056	***
Black	0.227	0.052	***	0.191	0.051	***
Asian	-0.022	0.119		0.166	0.087	
Born Overseas	0.047	0.093		0.095	0.068	
Children	-0.095	0.025	***	-0.152	0.014	***
Child < 6	-0.016	0.052		-0.036	0.034	
Remarried	0.031	0.062		-0.031	0.042	
Age	0.052	0.020	*	0.048	0.013	***
Age Squared	-0.0006	0.0003		-0.0005	0.0002	**
Weeks Worked 1991	0.047	0.001	***	0.051	0.001	***
< High School	-0.029	0.109		-0.549	0.148	***
Some College	0.059	0.046		0.086	0.049	
College Degree	0.318	0.078	***	0.292	0.051	***
Graduate School	0.537	0.106	***	0.512	0.051	***
Veteran	0.102	0.066		0.106	0.045	*
Reserves	0.120	0.182		0.124	0.080	
Navy	-0.014	0.056		-0.004	0.035	
Air Force	-0.013	0.052		-0.085	0.032	**
Marines	-0.051	0.082		-0.005	0.057	
F		75.724	***		228.642	***
R^2		0.463			0.520	
Adj. R^2		0.457			0.517	

Levels of significance: * $p \le .05$, ** $p \le .01$, *** $p \le .001$

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

makes and the average time spent at each location differentially affect White and Asian spouses. Asian spouses appear to receive more benefit from an increase in the average time between moves than do White spouses. Additionally, instead of suffering an earnings penalty for each additional move they have made (White spouses lose about 2.4% per move), Asian spouses actually receive a premium of about 15.4% per move.

Gender and race also interact to produce significant effects. The results from Table 8.3 indicate that while Black men do not differ significantly from White men, Black women tend to earn 28.4% more than do White women. Additionally, the results in Table 8.4 indicate that gender is an important distinction to make in the earnings of White spouses, where White women earn 23% less than White men. However, the results in this table also indicate that Black men and Black women do not differ significantly from one another.

Other important differences occur in the coefficients of the family-related variables. Men and women, for example, differ in the extent that the number of children they have living with them affects their earnings. Women receive an 11.2% decrease in earnings per child, while the number of children does not significantly influence the earnings of men. Remarriage also differentially affects Black and White spouses. Not having a significant influence on earnings for White spouses, remarriage is associated with a significant 34% decrease in the earnings of Black spouses. The remarriage coefficients of Whites and Asians also differed significantly, although neither coefficient was significantly different from zero.

Human capital variables such as age squared, education, and weeks worked in 1991 also differ in terms of how they affect earnings when the data are disaggregated. Age squared can be thought of as a measure of how quickly age loses its value as a determinant of earnings. Typically, earnings tend to rise with age to a point, after which they level off and, eventually, begin to decline. The results in Table 8.4 indicate that the value of age tends to decline more rapidly for Asian spouses than for White spouses. Educationally, both Black and White spouses with a graduate education tend to earn more than similar high school graduates. However, the difference between Black spouses with a graduate education and Black spouses with a high school education is significantly greater than the difference between White spouses with a graduate education and White high school graduates. The value of one week's worth of work also differed between Whites and both minority groups. While White spouses received an earnings increase of 5.1% for each week worked in 1991, both Blacks and Asians received a 4% increase in earnings per week worked in 1991. The spouse of officers and the spouses of enlisted personnel also differed in the coefficient for the number of weeks worked in 1991. The earnings of officer spouses increased more per week worked than the earnings of the spouses of enlisted personnel.

Lastly, two differences in the influence of military-related variables emerged when the data were disaggregated by racial group. Being a veteran was significant for Black spouses, but not for White spouses. Black spouses who were veterans tended to earn 31% more than Black spouses who were not veterans. Additionally, White spouses whose military members were in the Air Force tended to earn significantly

less than those White spouses whose military members were in the Army. This Army-Air Force difference was not evident in either minority group.

Earnings – Year Round Workers

When those who worked year-round in 1991 are separated out from other workers, the differences found between gender, race, and class categories are similar to those found in the more inclusive analysis above (Table 8.6). According to these results year-round women workers earn 19.6% of what men who work year-round earn and the Black premium over White year round workers is 13.3%. The spouses of enlisted personnel all earn significantly less than the spouses of more senior officers, ranging from a 25.8% difference for spouses of E1 – E4s to a 15.5% difference for spouses of E7 – E9s.

As far as geographic mobility is concerned, only the average time between moves appears to be significant. Thus, for those who have been able to work for an entire year, every year increase in the average time between moves is associated with a 2.6% increase in earnings. In addition to the geographic mobility associated with the military lifestyle, one other military-related variable was found to be significant—branch of service. More specifically, Navy spouses tended to earn about 10% more than the spouses of Army personnel.

When comparing the year-round workers to workers in general, it appears that gender and racial differences are smaller (although still significant) amongst year-round workers while class differences, based on the paygrade of the military member

Table 8.6: Ordinary Regression - Ln(Earnings in 1991) (Year-Round Workers)

X	N = 2745			N = 2644		
	b	s.e.	p	b	s.e.	p
Intercept	9.539	0.037	***	9.081	0.237	***
Moves	-0.003	0.007		0.009	0.010	
Time Between Moves	0.019	0.006	**	0.026	0.008	***
Years Overseas	0.007	0.006		0.011	0.006	
Sex				-0.218	0.058	***
Black				0.125	0.039	**
Asian				0.046	0.169	
Born Overseas				-0.067	0.071	
Born*Asian				-0.321	0.197	
E1 - E4				-0.299	0.077	***
E5 - E6				-0.210	0.060	***
E7 - E9				-0.168	0.059	**
O1 - O3				-0.123	0.067	
Children				-0.089	0.016	***
Child < 6				0.020	0.036	
Remarried				0.089	0.042	*
Age				0.040	0.013	**
Age Squared				-0.0006	0.0002	***
< High School				0.404	0.095	***
Some College				0.104	0.033	**
College Degree				0.401	0.049	***
Graduate School				0.635	0.056	***
Veteran				0.048	0.045	
Reserves				-0.001	0.106	
Navy				0.095	0.039	*
Air Force				0.032	0.035	
Marines				-0.040	0.059	
F		4.136	**		17.643	***
R^2		0.005			0.149	
Adj. R^2		0.003			0.141	

Levels of significance: * $p \le .05$, ** $p \le .01$, *** $p \le .001$

to which the civilian spouse is married, are more pronounced. In terms of geographic mobility, the number of moves a spouse has made was a significant predictor of earnings for workers in general, but not year-round workers. Additionally, the influence of the average time experienced between moves for year-round workers is twice that as was found in the more general analysis above.

Chapter Summary

Overall, White civilian husbands tend to earn more than White civilian wives, while Black men and women do not differ significantly from one another. This gender difference is largely expected given that men traditionally earn more than women in the labor market. In addition, Black women earned significantly more than White women. Such a difference, though, could be explained if Black spouses typically worked more hours per week (i.e., full-time) than White spouses, as the typical hours worked per week could not be controlled using these data. Results of the previous chapter support this explanation, as Black spouses were found to be significantly more likely than White spouses to work full-time.

Results in this chapter also indicate that the spouses of officers earn significantly more than the spouse of enlisted personnel. This finding is especially interesting given that age, education, and weeks worked are controlled and results from the previous chapter indicated that the spouses of officers were *less* likely than the spouses of enlisted personnel to work full-time. When separate models were estimated for both officer spouses and enlisted spouses, it was found that the spouses of officers earned significantly more per week worked than enlisted spouses. There

are several potential explanations for this finding. First, the spouses of officers may be able to take advantage of a "good-old-boys network" to which officers, especially those most senior, and their spouses have exclusive access. Such networks may funnel the spouses of officers into higher paying jobs of which the spouses of enlisted personnel may not even be aware. Second, the spouses of officers, having less financial pressure to work, may be able to be more selective in the employment that they take—holding out for a job that offers higher pay. Indeed, the spouses of officers are often discouraged from taking some jobs that are not well-paid, such as service jobs on or near the military installation (e.g., waitress at the NCO club, cashier at the commissary, greeter at Wal-Mart, etc.) because of the taboo of having an officer's spouse serving the spouse of an enlisted member or the enlisted member him/herself. Such class differences persist in the military. Lastly, employers offering more well-paid jobs may discriminate against the spouses of enlisted personnel by discrediting their credentials or by other means.

Geographic mobility was generally found to have a negative influence on the earnings of civilian spouses of military personnel. In the aggregate models, each move that a spouse made was associated with a 2% decrease in annual earnings, while for each year that spouse's average time between moves was increased was associated with a 1.3% increase in earnings. When the data were disaggregated by race, though, the effect of the average time between moves was confined to Asian spouses who earned a substantial premium for each year increase. Asian spouses also earned a significant premium for each move that they made. Asian spouses may become more skilled at finding better-paid employment with each move, while they also benefit

from local support groups when assigned to a given location, with which it may take some time to become familiar.

CHAPTER IX: JOB INTERFERENCE

The final analysis chapter examines how an employed civilian spouse's job and the job of his or her military member interfere with one another. In other words, this chapter asks, "What gender, race, and class differences are there in job interference and how are they affected by geographic mobility? In addition, in what ways, if any, do various subgroups differ in terms of how geographic mobility influences the level of interference experienced by a spouse." Analysis in this chapter includes only those spouses who are currently employed.

The level of interference that occurs between a spouse's job and his or her military member's job is indicated by a three-level variable which separates spouses into the following categories: those who experience no interference, those who experience some interference, and those who experience the most interference. Spouses were categorized into one of three categories based on their responses to question 67 of the DoD survey, which asks spouses about how their job interferes with that of their military member, and question 68, which asks about how their military member's job interferes with their own job. Both questions ask respondents to rate the extent of interference from "Not at all" to "Completely" using one of five categories (see Appendix A for exact question wording). The response categories for each question were assigned numbers, with a one being assigned to the category of lowest interference and a five being assigned to the category of highest interference.

Given that the responses to these two questions were highly correlated (Spearman's Rho = 0.692, $p < 0.001$), a principal components analysis was conducted

to see if a common factor could account for the variance in these questions. The results of this analysis indicated that a single factor consisting of equal parts of each response variable would account for 83.2% of the variance in those variables (factor loadings were 0.912 for each variable). Thus, an interference score was created for each individual by summing the numbers of the response categories for each question. A person who answered that he/she experienced no interference on both questions would have a score of two, while those who said that their own job and their military member's job completely interfered with one another would score a ten. Cronbach's alpha for this two-item scale was 0.791 (standardized alpha = 0.7981).

Because of the skewed nature of the distribution of scores on this interference scale (i.e., lack of normality), I decided to collapse the nine possible categories into three relatively equal ones. Using the 33rd and 66th percentile as cut points, all those with a score of two were placed in the first category (no interference), those with a score of three or four in a second category (some interference), and those with scores from five to ten in a third category (most interference). The rank ordering of these categories correlates well with the interference ratings on the original two questions. When this collapsed scale is correlated with questions 67 and 68 Spearman's rho is 0.827 and 0.935, respectively (both significant at $p < 0.001$). The percentages of individuals in each subgroup that were sorted into each interference category are given in Table 9.1.

Table 9.1: Percentage of Employed Spouses Experiencing Each Level of Interference

	No Interference[ab]		Some Interference[bc]		Most Interference[ab]	
	Mean	s.d.	Mean	s.d.	Mean	s.d.
Gender						
Men	39.7	30.0	27.9	27.5	32.4	28.7
Women	47.6	53.8	28.9	48.8	23.5	45.7
Race						
White	45.0	46.0	30.2	42.4	24.8	39.9
Black	53.2	72.1	25.0	62.5	21.8	59.7
Asian	50.2	55.9	24.6	48.1	25.2	48.5
Class						
Enlisted	47.4	78.3	28.2	70.6	24.4	67.3
Officer	44.7	25.9	31.5	24.2	23.8	22.2
Total	46.9	49.6	28.8	45.0	24.3	42.6

[a] Men significantly different from women
[b] Whites significantly different from Blacks
[c] Whites significantly different from Asians
[d] Blacks significantly different from Asians
[e] Enlisted significantly different from officer

Although this collapsed scale retains its ordinal scaling, preliminary analysis using cumulative logistic regression models did not meet proportional odds assumptions, implying that independent variables have differing effects on interference depending on which categories of the scale are compared. As this scale did not meet the assumption for analysis appropriate for ordinal variables (i.e., cumulative logistic regression), multinomial regression and other techniques appropriate for nominal level variables are used.

To assess the influence of gender, race, class, and geographic mobility net of other possible factors, multinomial logistic regression models were estimated. The reference category for the multinomial models is "no interference." Thus, the coefficients of these models can be interpreted as the change in the log odds of being in a given interference category (i.e., some interference or most interference) versus experiencing no interference at all that is associated with a one-unit change in the independent variable. An odds ratio is calculated for each variable whose coefficient is significant at the 0.05 level by exponentiating that coefficient. Subtracting 1 from the odds ratio and multiplying by 100 allows for the interpretation of the "percent change in the odds for each 1-unit increase in the independent variable" (Allison 2001: 29) or, for dummy variables, the percent difference between the given category and a reference category.

Initially, two multinomial models were estimated—one containing only geographic mobility variables and the other containing several factors that may also be related to job interference, including gender, race, and class. In addition to the factors controlled in other chapters, a variable that indicates whether or not the spouse is

employed full-time is also included. It is expected that those who work full-time are likely to experience more interference than non-fulltime workers. After estimating these models, the data are disaggregated by gender, race, and class. Separate models are estimated for men, women, Whites, Blacks, Asians, the spouses of enlisted members, and the spouses of officers. By comparing the coefficients across categories using three separate interaction models (i.e., one each for gender, race, and class), the differences between men and women, Whites and both minority racial groups, and the spouses of enlisted members and the spouses of officers as to how geographic mobility (and other factors) relate to job interference can be explored. While the interaction models are not presented explicitly, any significant results (at the 0.05 level) found are indicated in the appropriate tables. Multicollinearity in all models was evaluated by estimating equivalent models using OLS regression and evaluating the variance inflation factor of each coefficient. All of the variance inflation factors fell under 10 and the vast majority were under 2. Therefore, it appears that multicollinearity was not especially problematic in these models.

The results of the regression analysis in Table 9.2 indicate that women are no more likely than men to be in the "some interference" category relative to experiencing no interference, but are only about half as likely as men to be in the "most interference" category rather than experiencing no interference. Black spouses were significantly less likely than White spouses to be in either the "some interference" or "most interference" categories rather than experiencing no job

Table 9.2: Multinomial Logistic Regression – Job Interference

| | Geographic Mobility | | | | | | | | Full | | | | | | | |
| | Some Interference | | | | Most Interference | | | | Some Interference | | | | Most Interference | | | |
X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-0.402	0.078	***	0.669	-0.101	0.081		0.930	0.814	0.344	*	2.257	1.267	0.365	***	3.549
Moves	0.003	0.015			-0.072	0.017	***	0.933	0.057	0.023	*	1.059	0.048	0.026		
Time Between Moves	0.011	0.014	*		-0.070	0.016	***	0.959	0.041	0.018	*	1.041	-0.008	0.021		
Years Overseas	-0.030	0.012	*	0.970	-0.042	0.014	**		-0.030	0.014	*	0.971	-0.024	0.016		
Time on Station	-0.008	0.011			0.002	0.011			-0.000	0.013			0.012	0.012		
Sex									-0.244	0.154			-0.686	0.150	***	0.503
Black									-0.482	0.091	***	0.618	-0.608	0.100	***	0.545
Asian									-0.729	0.378			-0.253	0.363		
Born Overseas									-0.348	0.160	*	0.706	-0.768	0.196	***	0.464
Born*Asian									1.132	0.438	**	3.101	1.308	0.443	**	3.700
E1 - E4									-0.237	0.178			0.064	0.191		
E5 - E6									-0.200	0.144			-0.099	0.159		
E7 - E9									-0.372	0.139	**	0.689	-0.276	0.158		
O1 - O3									-0.020	0.153			-0.146	0.170		
Children									0.167	0.038	***	1.181	0.088	0.042	*	1.092
Child < 6									0.329	0.083	***	1.389	0.654	0.088	***	1.923
Remarried									0.020	0.101			0.125	0.109		
Age									-0.041	0.008	***	0.960	-0.055	0.009	***	0.947
< High School									-0.219	0.191			-0.081	0.214		
Some College									-0.096	0.078			0.146	0.086		
College Degree									-0.036	0.117			0.326	0.125	**	1.385
Graduate School									-0.023	0.136			0.564	0.145	***	1.757
Fulltime									0.243	0.069	***	1.275	0.180	0.074	*	1.197
Veteran									-0.011	0.109			-0.026	0.116		
Reserves									-0.626	0.258	*	0.535	0.066	0.217		

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Navy	-0.216	0.090 [*]	0.806	-0.024	0.094
Air Force	-0.074	0.082		-0.134	0.090
Marines	-0.171	0.136		-0.361	0.152 [*]	0.697
N	6151			5933	
-2 Log Likelihood Fitted Model	12002.674 [***]			11112.674 [***]	

Levels of significance (Wald Chi-Square): [*] $p \le .05$, [**] $p \le .01$, [***] $p \le .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: No Interference

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

interference. Black spouses were 38.2% less likely than Whites to experience some interference and 45.4% less likely to experience the most interference. Asians, at least those born in the U.S. or to military parents stationed overseas, did not differ significantly from their White counterparts. However, those Asians who were born overseas were significantly more likely to experience job interference. This is in contrast to the influence being born overseas had on White and Black spouses—a significant decrease in the likelihood of experiencing either "some" or "the most" job interference relative to experiencing no interference at all. Class, as measured by the paygrade of the military member to which the spouse is married, had little significant impact in these models. The only significant difference that occurred was between the spouses of senior enlisted members and the spouses of more senior officers. The spouses of senior enlisted members were 31.1% less likely than the spouses of more senior officers to experience some interference rather than none at all.

Looking at the geographic mobility model as well as the full model in Table 9.2, I find that geographic mobility has an important relationship with how much job interference a civilian spouse experiences. When considered alone, all of the various dimensions of geographic mobility except the amount of time the spouse has been at his or her current location has a relationship with the level of interference experienced by civilian spouses. The more time a spouse spends overseas appears to be related to a decreased likelihood of experiencing any job interference, while an increase in the number of moves a spouse has made and an increase in the average time a spouse experiences between moves are associated with a decreased likelihood of being in the "most interference" category versus experiencing no interference.

When geographic mobility is considered in a model controlling for numerous other factors, the influence of geographic mobility on the comparison of the "no interference" and the "most interference" categories disappears (i.e., is accounted for by other variables in the model). However, the number of moves a spouse makes, the average time that spouse experiences between moves, and the amount of time a spouse has spent overseas all have a significant relationship with whether a spouse would experience some interference versus no interference at all. Each move a spouse has made is associated with a 5.9% increase in the odds of experiencing some interference, while every year increase in the average time a spouse has experienced between moves increases the odds of experiencing some interference by 4.1%. The number of years spent overseas appears to work in the opposite direction, with each year spent overseas being associated with a 2.9% decrease in the likelihood of experiencing some job interference.

Other factors besides geographic mobility, gender, race, and class also appear to play an important role in job interference. Having more children, especially if at least one of those children is less than six years old, significantly increases the likelihood that the spouse will be in either the "some interference" or "most interference" categories instead of experiencing no interference. A spouse with a child under six is almost twice as likely as a spouse with no such child to be in the "most interference" category instead of experiencing no interference. Older spouses tend to experience less job interference than do younger spouses and those with a four-year college degree or higher are significantly more likely than high school graduates to experience the highest level of job interference rather than no interference at all. As

expected, those spouses employed full-time experience more job interference than those who are not employed full-time, being 27.5% more likely to experience some interference and 19.7% more likely to experience the most interference relative to not experiencing any interference.

The military-related variables in the full model suggest that Reserve/National Guard status and the branch of service in which the spouse's military member serves are also important. Reservists are 46.5% less likely than non-Reservists to experience some interference versus no interference. Relative to Army spouses, Navy spouses are 19.4% less likely to experience some interference and Marine Corps spouses 30.3% less likely to experience the most interference compared to experiencing no interference.

As the models presented in Table 9.2 constrains the coefficients of all subgroups to be equal, with the exception of being Asian and being born overseas, the data were disaggregated by gender, race, and class and separate models were estimated so that whether or not these subgroups differed significantly on any of these coefficients, especially those involving geographic mobility, could be examined (Tables 9.3 – 9.6). The mobility coefficients for men and women did not differ significantly from one another at the 0.05 level of significance. In fact, only one significant difference was found between the coefficients of men and women. This difference is in the influence of having a child under six years old. While having a child under six increases the likelihood of a women being in the "some interference" versus "no interference" category by 32.8%, the corresponding increase for men is 239.9%.

Table 9.3: Multinomial Logistic Regression – Job Interference by Gender

| | Men | | | | | | | | Women | | | | | | | |
| | Some Interference | | | | Most Interference | | | | Some Interference | | | | Most Interference | | | |
X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	-0.534	0.882			0.898	0.804			0.421	0.203	*	1.523	0.637	0.218	**	1.891
Moves	-0.030	0.115			-0.056	0.108			0.055	0.024	*	1.056	0.051	0.026		
Time Between Moves	0.038	0.060			-0.061	0.061			0.037	0.019			-0.010	0.022		
Years Overseas	0.080	0.066			0.052	0.065			-0.035	0.014	*	0.965	-0.032	0.016		
Time on Station	0.015	0.072			0.076	0.063			-0.000	0.013			0.009	0.012		
Black	0.019	0.324			-0.431	0.316			-0.526	0.096	***	0.591	-0.612	0.106	***	0.542
Asian	-0.381	0.922			-0.053	0.825			0.113	0.198			0.664	0.215	**	1.942
Born Overseas	0.284	0.572			-0.237	0.589			-0.230	0.155			-0.567	0.180	**	0.568
Officer	0.635	0.420			0.605	0.393			0.202	0.099	*	1.223	-0.010	0.110		
Children	0.078	0.178			0.221	0.164			0.166	0.038	***	1.180	0.060	0.044		
Child < 6	1.224	0.367	***	3.399	0.824	0.341	*	2.280	0.284	0.085	***	1.328	0.663	0.091	***	1.940
Remarried	0.130	0.397			0.062	0.370			0.006	0.105			0.131	0.114		
Age	-0.048	0.030			-0.071	0.028	*	0.932	-0.041	0.008	***	0.960	-0.058	0.009	***	0.944
< High School	0.514	1.467			1.890	1.095			-0.208	0.193			-0.133	0.221		
Some College	0.215	0.333			0.279	0.315			-0.100	0.081			0.160	0.090		
College Degree	-0.008	0.503			0.224	0.457			-0.032	0.120			0.322	0.130	*	1.380
Graduate School	0.739	0.536			0.820	0.506			-0.042	0.141			0.566	0.151	***	1.761
Fulltime	0.818	0.321	*	2.266	0.609	0.292	*	1.839	0.212	0.071	**	1.236	0.155	0.077	*	1.167
Veteran	0.206	0.337			0.413	0.315			-0.057	0.117			-0.172	0.130		
Reserves	-0.613	0.451			-0.481	0.392			-0.590	0.328	*		0.441	0.268		
Navy	-0.228	0.378			0.054	0.338			-0.211	0.093	*	0.809	-0.043	0.099		
Air Force	-0.283	0.329			-0.460	0.317			-0.055	0.085			-0.082	0.093		
Marines	0.281	0.856			0.042	0.821			-0.187	0.138			-0.372	0.155	*	0.689
N	1162								4771							

	-2 Log Likelihood Fitted model		10322.853 ***
	771.171 ***		

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$
Odds ratios calculated only for those variables significant at the .05 level using Wald test
Reference category: No Interference
Shaded rows indicate that the difference in the coefficients for that X variable between men and women is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.
Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

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Table 9.4: Multinomial Logistic Regression – Job Interference by Race (White and Black)

| | White | | | | | | | | Black | | | | | | | |
| | Some Interference | | | | Most Interference | | | | Some Interference | | | | Most Interference | | | |
X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.175	0.304			1.169	0.309	***	3.219	1.253	0.576	*	3.501	1.297	0.683		
Moves	0.075	0.026	**	1.078	0.049	0.029			-0.022	0.061			0.068	0.067		
Time Between Moves	0.046	0.021	*	1.047	-0.023	0.024			0.041	0.050			-0.157	0.074	*	0.855
Years Overseas	-0.048	0.016	**	0.953	-0.034	0.018			0.061	0.031	*		0.029	0.038		
Time on Station	0.011	0.015			0.028	0.014			-0.107	0.046	*	0.899	-0.081	0.062		
Sex	-0.013	0.181			-0.600	0.171	***	0.549	-1.018	0.331	**	0.361	-1.230	0.366	***	0.292
Born Overseas	-0.404	0.177	*	0.668	-0.609	0.202	**	0.544	0.204	0.411			-4.992	3.028		
Officer	0.176	0.106			0.064	0.116			0.229	0.302			-0.545	0.372		
Children	0.174	0.044	***	1.190	0.084	0.049			0.081	0.086			0.191	0.113		
Child <6	0.350	0.095	***	1.419	0.633	0.100	***	1.882	0.259	0.195			0.918	0.222	***	2.504
Remarried	0.048	0.111			0.173	0.119			0.223	0.291			-1.211	0.433	**	0.298
Age	-0.041	0.009	***	0.960	-0.060	0.010	***	0.942	-0.032	0.018			-0.064	0.022	**	0.938
<High School	-0.322	0.247			-0.128	0.263			-0.414	0.478			-0.224	0.846		
Some College	0.058	0.090			0.138	0.097			-0.459	0.186	*	0.632	0.582	0.238	*	1.790
College Degree	0.090	0.131			0.207	0.141			-0.359	0.344			1.602	0.394	***	4.964
Graduate School	0.174	0.157			0.656	0.164	***	1.926	-0.543	0.324			0.781	0.388	*	2.184
Fulltime	0.289	0.078	***	1.334	0.183	0.084	*	1.200	0.030	0.179			0.489	0.211	*	1.630
Veteran	0.042	0.121			-0.033	0.130			-0.616	0.276	*	0.540	-0.027	0.291		
Reserves	-0.596	0.278	*	0.551	0.189	0.230			-0.624	0.807			-1.607	1.058		
Navy	-0.380	0.104	***	0.684	0.080	0.108			0.560	0.219	*	1.750	-0.577	0.275	*	0.562
Air Force	-0.070	0.093			0.013	0.102			0.011	0.215			-0.630	0.258	*	0.533
Marines	-0.231	0.156			-0.178	0.170			0.252	0.320			-0.920	0.446	*	0.398
N	5184								502							
-2 Log Likelihood Fitted model	8605.513 ***								1778.959 ***							

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Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: No Interference

Shaded rows indicate that the difference in the coefficients for that X variable between White and Black spouses is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table 9.5: Multinomial Logistic Regression – Job Interference by Race (White and Asian)

| | White | | | | | | | | Asian | | | | | | | |
| | Some Interference | | | | Most Interference | | | | Some Interference | | | | Most Interference | | | |
X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.175	0.304			1.169	0.309	***	3.219	1.698	1.863			3.537	1.559	*	34.350
Moves	0.075	0.026	**	1.078	-0.049	0.029			-0.182	0.119			-0.476	0.159	**	0.621
Time Between Moves	0.046	0.021	*	1.047	-0.023	0.024			-0.087	0.089			0.083	0.079		
Years Overseas	-0.048	0.016	**	0.953	-0.034	0.018			-0.051	0.063			-0.099	0.080		
Time on Station	0.011	0.015			0.028	0.014			0.005	0.060			-0.112	0.074		
Sex	-0.013	0.181			-0.600	0.171	***	0.549	0.439	1.650			-1.036	1.169		
Born Overseas	-0.404	0.177	*	0.668	-0.609	0.202	**	0.544	1.365	0.532	*	3.915	1.114	0.540	*	3.047
Officer	0.176	0.106			0.064	0.116			0.471	0.517			0.071	0.545		
Children	0.174	0.044	***	1.190	0.084	0.049			-0.001	0.173			0.226	0.193		
Child < 6	0.350	0.095	***	1.419	0.633	0.100	***	1.882	0.737	0.433			0.199	0.420		
Remarried	0.048	0.111			0.173	0.119			-1.542	0.728	*	0.214	0.661	0.553		
Age	-0.041	0.009	***	0.960	-0.060	0.010	***	0.942	-0.067	0.028	*	0.935	-0.074	0.035	*	0.929
< High School	-0.322	0.247			-0.128	0.263			0.109	0.480			0.929	0.582		
Some College	0.058	0.090			0.138	0.097			-1.628	0.458	***	0.196	-0.719	0.500		
College Degree	0.090	0.131			0.207	0.141			-1.473	0.548	**	0.229	0.593	0.550		
Graduate School	0.174	0.157			0.656	0.164	***	1.926	-1.594	0.870			-0.796	0.998		
Fulltime	0.289	0.078	***	1.334	0.183	0.084	*	1.200	0.421	0.350			-0.691	0.371	*	
Veteran	0.042	0.121			-0.033	0.130			2.827	1.653			0.720	1.334		
Reserves	-0.596	0.278	*	0.551	0.189	0.230			-2.463	2.398			-2.055	2.183		
Navy	-0.380	0.104	***	0.684	0.080	0.108			0.142	0.444			-0.056	0.505		
Air Force	-0.070	0.093			0.013	0.102			-0.505	0.435			-0.019	0.470		
Marines	-0.231	0.156			-0.178	0.170			-1.037	0.678			-1.010	0.769		
N	5184								247							
-2 Log Likelihood Fitted model	8605.513 ***								483.983 ***							

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Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: No Interference

Shaded rows indicate that the difference in the coefficients for that X variable between White and Asian spouses is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table 9.6: Multinomial Logistic Regression – Job Interference by Class

| | Enlisted | | | | | | | | Officer | | | | | | | |
| | Some Interference | | | | Most Interference | | | | Some Interference | | | | Most Interference | | | |
X	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.778	0.293	**	2.178	1.514	0.298	***	4.546	-0.251	0.598			-0.147	0.665		
Moves	0.071	0.028	*	1.074	0.014	0.031			0.002	0.042			0.096	0.047	*	1.101
Time Between Moves	0.054	0.021	*	1.055	-0.036	0.024			-0.032	0.042			0.045	0.042		
Years Overseas	-0.038	0.015	*	0.963	-0.015	0.017			-0.011	0.029			-0.078	0.037	*	0.925
Time on Station	0.001	0.015			0.023	0.014			-0.008	0.027			-0.062	0.041		
Sex	-0.237	0.175			-0.691	0.168	***	0.501	-0.231	0.324			-0.624	0.330		
Black	-0.441	0.098	***	0.643	-0.567	0.106	***	0.567	-0.647	0.282	*	0.524	-0.917	0.335	**	0.400
Asian	0.180	0.210			0.842	0.230	***	2.320	-0.462	0.475			-0.323	0.509		
Born Overseas	-0.190	0.163			-0.699	0.192	***	0.497	-0.116	0.369			0.202	0.400		
Children	0.200	0.043	***	1.222	0.070	0.049			0.064	0.077			0.142	0.088		
Child < 6	0.271	0.091	**	1.311	0.637	0.097	***	1.890	0.657	0.193	***	1.929	0.896	0.209	***	2.451
Remarried	0.059	0.113			0.041	0.122			-0.164	0.232			0.489	0.245	*	1.630
Age	-0.051	0.009	***	0.950	-0.058	0.010	***	0.944	-0.007	0.016			-0.046	0.018	*	0.955
< High School	-0.225	0.196			-0.072	0.218			0.197	0.920			0.222	1.149		
Some College	-0.105	0.083			0.157	0.089			0.155	0.256			0.342	0.329		
College Degree	-0.123	0.143			0.099	0.151			0.309	0.267			1.026	0.331	**	2.791
Graduate School	-0.226	0.206			0.448	0.200	*	1.565	0.284	0.266			1.007	0.331	**	2.736
Fulltime	0.269	0.079	***	1.309	0.092	0.083			0.259	0.147			0.611	0.168	***	1.842
Veteran	0.037	0.121			-0.054	0.130			-0.071	0.250			0.019	0.269		
Reserves	-1.434	0.381	***	0.238	-0.099	0.252			0.597	0.433			0.576	0.450		
Navy	-0.277	0.102	**	0.758	-0.008	0.105			0.062	0.190			-0.062	0.214		
Air Force	-0.047	0.094			-0.085	0.102			-0.072	0.171			-0.175	0.192		
Marines	-0.232	0.152			-0.421	0.169	*	0.656	0.075	0.308			-0.071	0.345		
N	1704								4229							

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-2 Log Likelihood Fitted model	8667.530 ***	2387.703 ***

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: No Interference

Shaded rows indicate that the difference in the coefficients for that X variable between the spouses of enlisted personnel and those of officers is significant at the 0.05 level of significance using an interaction model (not shown) which interacted officer/enlisted status with each X variable.

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

The results of the comparison of separate models for White and Black spouses are reported in Table 9.4, while the comparison between White and Asian spouses is reported in Table 9.5. Unlike when the data were disaggregated by gender, significant differences were found between racial minorities in how geographic mobility is related to job interference. The coefficient for the number of moves a spouse has made for Asian spouses was significantly different from that for White spouses at all levels of job interference. Each move made was not a significant predictor of whether an Asian spouse experienced some interference, but was related to a 37.9% decrease in the likelihood of being in the "most interference" category versus experiencing no interference. However, each move that a White spouse made increased his/her likelihood of experiencing some interference versus no interference, but had no significant relationship with whether or not he/she experienced the highest levels of interference.

Black spouses differed significantly from White spouses in terms of how the number of years spent overseas and the time a spouse has been at his or her current geographic location relates to whether a spouse experiences either some or no interference. Every year spent overseas decreased the likelihood of a White spouse experiencing some interference by 4.7%, while not significantly affecting Black spouses. On the other hand, Black spouses experienced a significant 10.1% reduction in the likelihood that they experienced some interference for each year they were at their present location, a factor that was not significant for White spouses.

Besides geographic mobility, other significant differences between Whites and minority groups emerged in how various factors were related to job interference. For

example, Blacks and Whites differed significantly as to how sex was related to whether a spouse experienced some versus no interference. While Black women were 63.9% less likely than Black men to experience some interference, White men and women did not differ significantly from one another at this level of comparison. Asians differed from Whites in terms of the influence of being born overseas on all levels of interference. Being born overseas was generally associated with a decrease in the likelihood of White spouses experiencing interference, but increased the likelihood of Asian spouses experiencing such interference by approximately three to four times. Remarriage was not significantly related to job interference at any level for White spouses, but the same cannot be said for minority spouses. Being remarried significantly decreased the likelihood that Asian spouses would experience some interference and Blacks would experience the most interference relative to experiencing no interference at all.

Spouses' education level as well as whether or not they were working in a full-time job also performed differently for minority groups than for White spouses. Asian and Black spouses with some college education were significantly less likely than spouses with only a high school education to be in the some interference category rather than the no interference category. The same is also true of Asian spouses with a four-year college degree. For White spouses, however, education was not at all significant in the some interference-no interference comparison. For black spouses, all educational levels were significantly more likely than high school graduates to be in the "most interference" category rather than experience no interference. In fact, those Black spouses with a four-year degree were almost 5 times as likely as Black high

school graduates to fall into the highest interference category rather than the lowest. This value was significantly different from that estimated for White spouses, whose coefficient for this variable was not significantly different from zero. In terms of the importance of having a full-time job, the association between such employment and job interference was significantly greater for White spouses than Asian spouses, whose full-time employment coefficient was not significant.

Militarily, the veteran status of the spouse as well as the branch of service in which the military member in the marriage is serving also showed some racial differences between Black and White spouses. While veteran status was not a significant factor in either model for White spouses, being a veteran was associated with a 46% reduction in being in the "some interference" category rather than the "no interference" category. Relative to having a military member in the Army, White Navy spouses were significantly less likely to be in the "some interference" category while Black Navy spouses were more likely than Black Army spouses to be in the "some interference" category and significantly less likely to be in the "most interference" category. Black Air Force spouses were also less likely than Black Army spouses to be in the highest interference category, although this factor was not significant for White spouses.

When the data were disaggregated by the officer/enlisted status of the military member to which the spouse is married (Table 9.6), differences in the coefficients of officer's spouses and the spouses of enlisted personnel were detected. In terms of differences in the influence of geographic mobility, the coefficients of time on station differed significantly from one another for these two groups at the "most interference"

level, but neither group's coefficient was significantly different from zero. In the "some interference" versus "no interference" comparison, both age and Reserve status were significantly associated with a decrease in the likelihood of experiencing some interference for the spouses of enlisted personnel. However, the coefficients of these variables were not significant for officers' spouses. In the "most interference" versus "no interference" comparison, Asian enlisted spouses were more than twice as likely as White enlisted spouses to experience the highest levels of interference. If an enlisted spouse was born overseas, however, his/her likelihood of being in the most extreme category was reduced by about one half. For the spouses of officers, Asian spouses did not differ significantly from their White counterparts and being born overseas did not significantly affect the level of interference they experienced. However, the spouses of officers who had at least some graduate school or who were employed full-time had a significantly higher likelihood of being in the highest interference category than corresponding spouses of enlisted personnel, for whom the coefficients of these two variables did not reach statistical significance.

Chapter Summary

Overall, then, the evidence seems to indicate that men tend to experience higher levels of interference than women and White spouses more than Black spouses, with class playing a relatively insignificant role. Such differences may occur as a result of at least three factors. First, the jobs held by the spouses who experience the most interference may be less flexible in allowing these civilian spouses to adapt to the demands of their military members' jobs. Second, spouses who indicate that they

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experience more interference may simply be more sensitive to such interference. For example, in the case of men experiencing more interference than women, women are traditionally expected to adapt to the work demands of the men to whom they are married. Because of this, civilian wives who experience levels of interference similar to that of civilian husbands may be less likely to report such interference or report it at lower levels. Lastly, the military members of the spouses who experience the most interference may have military jobs which are more demanding of their civilian spouses.

Net of other factors considered in the multivariate analysis, geographic mobility has a significant relationship with job interference. An increase in the number of moves a spouse has made as well as an increase in the average time between moves were associated with experiencing an increased level of interference, relative to experiencing no interference, in the aggregate models. It may be the case that geographic mobility affects interference in two different ways. First, increased geographic mobility, as measured by the number of moves a spouse has made, may lead to higher levels of interference due to the interruptions in employment experienced by those who must move. Second, increased geographic *stability*, as measured by the average time between moves, may also increase levels of interference as spouses have more time to "settle in" and find desirable employment, leading to higher levels of interference when the time does come to relocate. This does not appear to be the case, however, for Black spouses who experience a decrease in interference as their time on station increases. The number of years spent overseas was, however, associated with a decrease in the likelihood of experiencing

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interference. The influence of being overseas, though, is significant primarily for White spouses. It may be that White spouses who have lived overseas choose jobs that are more flexible than spouses who have not lived overseas.

In addition to geographic mobility, other factors also appear to affect how much interference a civilian spouse experiences. Two such factors that are especially noteworthy are education and children. Those spouses who have a four-year degree or greater experience higher levels of interference than spouses with only a high school education or GED. Such spouses may be in jobs that require more commitment from them (e.g., careers versus jobs) and offer less flexibility in meeting the demands of being the spouse of a military member. It also appears that, as one would expect, having more children as well as younger children increases the degree to which civilian spouses experience job interference.

CHAPTER X: DISCUSSION AND CONCLUSION

Having presented the results of my analysis, this chapter explicitly applies those results in suggesting possible answers to the research questions presented earlier in this project and in evaluating my hypotheses. First, however, the results are broadly summarized in terms of the overall gender, race, and class differences in the dimensions of employment addressed in this study. Second, my hypotheses are evaluated and the influence of each dimension of geographic mobility on the employment of civilian spouses is summarized. Lastly, policy implications of this research are discussed and suggestions are made as to what research in this area should be accomplished next.

Gender, Race, and Class Differences in the Employment Situation of Civilian Spouses

Gender, race, and class differences were found in many of the aspects of employment under examination in this project. While these differences were not themselves the primary topic of this research, they do provide a context within which the influence of geographic mobility can be viewed. They are also important in their own right. Therefore, the various gender, race, and class differences that emerged in my analysis are summarized below.

In terms of gender, I found that, when deciding whether or not to work for pay, working for financial need makes much more of a contribution to the employment decision of White men than White women. However, this does not appear to be the case for Black spouses, as Black men and women do not differ significantly in this

respect. It is interesting that men feel as if they need to work more for financial need than women, especially given that men and women in the Armed Forces are paid at equal levels. It may be that civilian husbands view the military incomes of their wives as less adequate than the civilian wives view the income from their military husbands. While financial need appears to be more important in the employment of men, this does not make finding employment less problematic. In fact, finding employment is generally perceived as more problematic for men who are married to military members than women. As one would expect, then, I also find that, overall, men are likely to be more dissatisfied than women concerning their employment opportunities. However, this situation appears to be reversed with Black men and women, where it is the Black women who are more likely to experience the highest levels of dissatisfaction with their employment opportunities. It may be the case that Black women find their opportunities more limited because of their double-minority status (i.e., being Black and being a woman).

Although not statistically different from men, it is noteworthy that education appears to play a significant role for women in whether or not they work for financial need, have difficulty finding employment, and are satisfied or dissatisfied with their employment opportunities. In general, those civilian wives who have more than a high school diploma (i.e., some college, four-year degree, or graduate school), are more likely to work for need, experience more difficulty in their search for employment, and are less satisfied with their employment opportunities. Those with higher levels of education may have higher aspirations for both their standard of living and the type of employment which they will accept. Thus, those with higher levels of

education may perceive that they need to work more for financial need, while being less likely to accept employment not commensurate with their education, thus, creating difficulties in finding employment and decreasing their satisfaction with their employment opportunities. It may also be the case that these education-related findings are driven by a lack of education-appropriate jobs for women in local labor markets surrounding military installations. Indeed, Booth (2000) finds that Black and White women (in addition to White men) experience a decrease in their returns to education in labor markets with high concentrations of military personnel. It may be that in such markets, this decreased return on education is caused by those with higher levels of education taking jobs for which they are overqualified and, thus, underpaid.

Broader studies of the U.S. population have found that men are generally more likely to be employed (Bureau of Labor Statistics 2003a), to work full-time when employed (Blau, Ferber, and Winkler 1998), to earn more money (Blau, Ferber, and Winkler 1998), and to be unemployed (versus not in the labor force) (Bureau of Labor Statistics 2003a) than women. These differences are also found in my analyses. Although men are generally more dissatisfied with their employment opportunities and feel that finding employment is more problematic, they are still significantly more likely than women to be employed in a paying job. Additionally, when employed, civilian husbands are more likely than civilian wives to be employed full-time and earn significantly more money as a result of their employment. Overall, civilian husbands earn 21.3% more than civilian wives. However, this earnings difference is largely driven by White spouses, as Black men and women did not differ significantly from one another in terms of earnings. Thus, while gender is an important factor in

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the earnings of White spouses, it does not appear to be a significant factor related to the earnings of Black spouses. Of those not employed, men are generally more likely than women to be unemployed rather than not in the labor force. However, the difference between White men and women in this respect is significantly greater than the difference between Black men and women, for whom gender was again not significant.

As a consequence of a spouse's employment, some interference may develop between the job of the civilian spouse and the job of the military member. I find that while employed men are equally likely as employed women to experience some interference, they are twice as likely to experience the highest levels of interference relative to experiencing no interference at all. Gender was significant, though, at the "some interference" level for Black spouses where Black men were much more likely than Black women to have experienced some interference versus no interference at all. Thus, at least in terms of interference, gender appears to be important for both White and Black spouses with men being more likely to experience such interference. One possible explanation for this gender difference is that men may take jobs that are less flexible and make it more difficult to adjust the demands of their own job to the demands of the military member's job than those jobs occupied by civilian wives. It may also be the case, however, that civilian husbands are more sensitive than civilian wives to such interference. That is, traditionally women have adapted, whether by choice or not, to the work demands of their husbands. Thus, civilian wives may be less likely to report, or more likely to report at a lower level, any interference they experience between their job and that of their husband compared to what a husband

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might report. Certainly more research is needed to determine if either of these explanations can account for the observed differences.

Looking at racial differences in the employment situation of civilian spouses, I find that working for financial need makes much more of a contribution to the employment decision of Blacks than Whites. Again, given that all military members of the same paygrade are paid at the same rate, regardless of race, this finding is especially interesting. Black spouses also tend to experience more difficulty finding employment than do White spouses and are also likely to be more dissatisfied with employment opportunities than Whites. However, this difference in satisfaction levels appears to be mostly a function of the difference between Black and White Women rather than Black and White men, who do not differ significantly from one another. While being Black or White is not a significant factor related to how dissatisfied civilian husbands are with their employment opportunities, being White or Asian does make a difference in terms of the difficulty experienced in finding employment by both civilian husbands and civilian wives. White men tend to experience more difficulty finding employment than Asian men, but White women tend to experience less difficulty than Asian women. Thus, being Asian, relative to being White, appears to have the opposite influence on men as it does on women in terms of the difficulty a spouse has trying to find employment.

While Blacks tend to experience more difficulty finding employment and are generally less satisfied with their employment opportunities than Whites, they are significantly more likely than Whites to be employed. Racial difference in rates of employment are not surprising given the weight of women's data in this analysis and

the finding in broader surveys that a higher proportion of Black women than White women are employed (Bureau of Labor Statistics 2003b). When employed, Blacks are more likely than Whites to be employed full-time and both Blacks and Asians were more likely than Whites to be in a Federal job. It may be that minority spouses seek Federal employment more often to avoid potential discrimination in the civilian sector and the anti-discrimination policies of the Federal government encourage their hiring after they apply. One surprising finding in this study, though, is that Black women tended to earn significantly more than White women. This may be due to the finding that Blacks are more likely to be employed full time than Whites and the hours worked per week in the year in which earnings were asked about was not able to be controlled for in this analysis. Furthermore, of those not employed, Blacks are significantly more likely than Whites to be unemployed versus not in the labor force. This finding is also consistent with what is found in broader surveys (Bureau of Labor Statistics 2003b).

The level of interference experienced between the job of the civilian spouse and the job of the military member also appears to differ according to the race of the spouse. For example, I found that Black spouses were significantly less likely than White spouses to experience some interference or the highest levels of interference relative to experiencing no interference at all. Racial differences also emerged among White and Asian spouses of enlisted personnel. Asian enlisted spouses were twice as likely as White enlisted spouses to experience the highest levels of interference, while White and Asian spouses of officers did not differ significantly from one another. As with gender, it may be that employed Black spouses (relative to White spouses) and employed White enlisted spouses (relative to Asian enlisted spouses) obtain jobs more

adaptable to the demands of being married to a military member. However, more research is needed to explore this and other possible explanations.

Class, as measured by either the paygrade or the officer/enlisted status of the military member to whom the civilian spouse was married, also had a significant influence on the employment situation of civilian spouses. In terms of the contribution working for need made to the employment decision of civilian spouses, I found that working for financial need makes much more of a contribution to the employment decision of enlisted spouses than the spouses of officers. This is perfectly logical since officers are paid far more than enlisted personnel who have been in the service an equivalent number of years. The spouses of enlisted personnel, despite needing to work more out of financial necessity, indicate that finding employment is more problematic than do the spouses of more senior officers. Additionally, enlisted spouses are generally more dissatisfied with employment opportunities than the spouses of more senior officers. It may be that because the spouses of enlisted personnel must work more out of financial necessity and have more difficulty obtaining employment, they may not be able to be as particular as to exactly what kinds of jobs they take or they may have less time to spend searching for desirable employment than the spouses of officers, leading to increased levels of dissatisfaction with job opportunities.

As it did with women, education appears to be particularly important for the spouses of enlisted personnel in terms of how much working for need contributes to their employment decision, how much difficulty they have finding a job, and how satisfied they are with their employment opportunities. Those enlisted spouses with

higher levels of education may have higher aspirations for both their standard of living and the type of employment which they will accept and, thus, may perceive that they need to work more for financial need, while being less likely to accept employment not commensurate with their education. This may create difficulties in finding employment and decrease the satisfaction of enlisted spouses with their employment opportunities. As with women, it may also be the case that these education-related findings are driven by a lack of education-appropriate jobs for enlisted spouses in the areas surrounding military installations.

Regardless of their level of dissatisfaction with job opportunities, spouses of enlisted personnel are more likely to be employed than spouses of officers. However, this appears to hold primarily for women, as male officer and enlisted spouses did not differ significantly from one another. In other words, regardless of class, men work for pay. On the other hand, women of higher class are less likely to be employed than women of lower class. When employed, spouses of all paygrades were more likely to be employed full-time than spouses of more senior officers. These findings are likely to be driven, at least in part, by financial need—those of lower class must work and must work more often in order to make ends meet. Male spouses, though, are largely expected to work regardless of any other conditions (e.g., see Bourg 1995).

However, the employed spouses of officers, in general, earn significantly more than the spouses of enlisted personnel—even controlling for age, education, and the number of weeks worked. Since the spouses of officers are less likely than the spouses of enlisted personnel to be working full-time, these results seem to indicate that the spouses of officers and the spouses of enlisted personnel enter different kinds

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of jobs with significantly different levels of monetary compensation not explainable by education. The difference does not appear to be in Federal employment, though, as only the spouses of E7s – E9s, when employed, were more likely to have a Federal job than the spouses of O4s and above. This earnings differential between the enlisted spouses and the spouses of officers may be tied to the ability of officers' spouses to network with other officers and their spouses. Such a network may funnel the spouses of officers into higher paying jobs of which the spouses of enlisted personnel may not even be aware. Since the spouses of officers have less financial need than enlisted spouses to work, it may also be the case that the spouses of officers can afford to wait for a more desirable, higher paying position to become available, while the spouses of enlisted personnel must take what is available to them (within reason) when searching for employment. Indeed, the spouses of officers are discouraged from taking certain lower-paid positions on or near military installations, as it is generally considered a violation of "class" norms for the spouse of an officer to be in a position of employment which requires that he or she "serve" enlisted members or their spouses (e.g., cashier at the commissary, waitress at the NCO club). Lastly, it is also possible that certain employers—those with higher paying positions available—prefer to hire the spouses of officers rather than enlisted spouses (i.e., discriminate against enlisted spouses). The employed spouses of senior enlisted members were also about three times more likely to experience some interference between their job and the job of their military member than the employed spouses of more senior officers.

Of those spouses who were not employed, enlisted spouses were significantly more likely than the spouses of officers to be unemployed versus not in the labor

force. If financial necessity is indeed driving the employment of enlisted spouses to a greater degree than it is influencing the spouses of officers, the spouses of enlisted personnel would be more likely than the spouses of officers to continue to seek employment (remaining unemployed) instead of dropping out of the labor force. When looking only at those spouses who have dropped out of the labor force, senior enlisted spouses were significantly more likely than the spouses of more senior officers to be classified as discouraged workers (e.g., they would work if they felt that there were appropriate jobs available for which they would qualify, but are not actively seeking employment). It may be that spouses of more senior officers who are not in the labor force are more likely to have voluntarily chosen their status (or at least had that option), while those spouses of senior enlisted members who are not in the labor force may leave more often because they perceive that there are no appropriate jobs available for them.

The Impact of Geographic Mobility on the Employment Situation of Civilian Spouses

Having summarized the gender, race, and class differences in the various employment dimensions in this study, I now turn to how geographic mobility affected each of those dimensions and how the influence of geographic mobility differed by gender, race, and class. Below I list each research question addressed in this study. Below each research question I apply the findings reported in the previous chapters to the hypotheses I made related to that research question. Following my evaluation of the hypotheses, I summarize my results by the various dimensions of geographic

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mobility addressed in this study, highlighting the multidimensional nature of geographic mobility in the military.

Evaluating the Hypotheses

1. Does gender, race, or class affect the likelihood that a civilian spouse will move as a result of their spouse's reassignment?

The results of the analysis in Chapter V indicate that the answer to this research question is an emphatic "yes." Net of other factors controlled in the regression models, all three factors had a significant influence on the geographic mobility of spouses. In terms of gender, I hypothesized that the civilian husbands of military women would be less likely to move as a result of their spouse's reassignment than the civilian wives of military men (Hypothesis 1.a.i.) and that the civilian husbands of military women move less frequently (i.e., have more time, on average, between moves) than the civilian wives of military men (Hypothesis 1.a.ii.). Both of these hypotheses are supported. According to my results, civilian husbands made a significantly smaller percentage of the moves made by their military member than civilian wives. In fact, the rate of "tied migration" of civilian husbands was 6.8 percentage points lower than that of civilian wives. Civilian husbands may sometimes stay behind in order to take advantage of employment situations which are beneficial to them, while civilian wives may be more likely to just move. Additionally, civilian husbands, on average, experienced almost a half a year longer between moves than did civilian wives. This difference is likely tied to gender differences in the jobs men and women have in the military. If the jobs in which men are more highly concentrated

(e.g., direct-ground combat units) have higher mobility than those in which women are concentrated (e.g., administration/support), then civilian husbands would move less often than civilian wives.

It was also hypothesized that civilian husbands and wives in racial minorities would move less frequently (i.e., have more time, on average, between moves) than non-minority husbands and wives (Hypothesis 1.b.i.). This hypothesis was not supported with regards to Black spouses, who did not differ significantly from Whites in terms of the average time between moves. However, significant support was found for the difference between White and Asian spouses. On average, Asian spouses experienced an additional 11 months (approximately) in between moves compared to their White counterparts. Asian spouses may encourage their military member to remain at each assignment as long as possible in order to take advantage of the support networks for Asian spouses surrounding some military installations, so as to minimize the frequency with which new networks must be built or entered. Asian spouses did not, however, differ significantly from White spouses as to the percentage of their military member's moves that they also made. The same cannot be said for Black spouses, though, who had a tied migration rate 4.6 percentage points lower than that of Whites. For some Blacks, it may be that the costs associated with finding a new job in a new location may be higher than the costs of staying without their military spouses.

With regards to class, I further suggested that civilian husbands and wives of lower class would be more likely to move as a result of their spouse's reassignment than civilian spouses of higher class (i.e., when a military member moves, civilian spouses of military members of lower rank are more likely to follow them to their new

assignment than are civilian spouses of higher ranking military members) (Hypothesis 1.c.i.). Contrary to this hypothesis, I found that the spouse of more senior officers make a significantly higher percentage of their military member's moves than any other paygrade category—a rate that is 12 percentage points higher than that of the spouses of junior enlisted personnel. One might explain this unexpected result in a relatively straightforward manner. Because more junior personnel are likely to have made a fewer number of moves than more senior officers, each move that the military member made that the spouse did not make would account for a significantly higher proportion of moves among the spouses of more junior personnel, thus deflating their tied migration rates. In additional analysis in which the number of moves was held constant, the coefficients of the rank variables actually switched direction (and remained significant), with the spouses of all junior personnel actually having a higher tied migration rate than the spouses of more senior officers (with differences ranging from 3.3% for spouses of E7 – E9s to 11.7% for the spouses of E5 – E6s), thus supporting my original hypothesis. Although a hypothesis was not explicitly made concerning the frequency of moves and class, it is noteworthy that the spouses of more senior officers moved significantly more often (i.e., had a smaller average time between moves) than did the spouses of any other paygrade.

Looking at the results for the tied migration variable, one must remember that not moving with your military member, even to a new permanent assignment is not always a choice. Sometimes military members are assigned to remote or hostile locations at which the family of the military member is either not permitted or permitted only at the sole expense of the military member. If the military members of

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those spouses who experience the lowest levels of tied migration are more likely to be sent on such remote assignments, this would account for at least some of the variance in this measure of geographic mobility. Data are not available, though, as to the demographic breakdown of those soldiers who are sent on remote tours of duty. One should also note that while there are significant gender, race, and class differences in terms of tied migration, the vast majority of all spouses move with their military members.

2. Does geographic mobility influence the reasons why spouses seek employment or limit the perceived opportunities for employment?

The analysis presented in Chapter VI suggests that geographic mobility does indeed play an important role in whether or not spouses seek employment for financial need, the difficulty they experience finding employment, and their satisfaction with employment opportunities. However, the influence of geographic mobility on these outcomes varied by gender, race, and class. Initially, I hypothesized that increasing levels of geographic mobility would be positively associated with seeking employment for financial need (Hypothesis 2.a.i.) and that those civilian spouses who moved more frequently would tend to perceive that they have fewer employment opportunities (Hypothesis 2.a.ii.).

In terms of whether or not financial necessity made a major contribution to a spouse's employment decision, geographical mobility had no overall significant effect when other factors were controlled. However, when the data was disaggregated by race and by class, the importance of certain geographic mobility variables became

apparent. For example, the number of years spent overseas had a significant effect for Whites—an increasing amount of time spent overseas was related to financial necessity becoming a major factor in a spouse's decision to work. This may be a result of the increased costs associated with living in some overseas locations. The amount of time a Black spouse has been at his or her current location also appeared to be significant, decreasing the likelihood that financial need would be a major contributor to the employment decision by 18.5% for every year on station. For the spouses of enlisted personnel, the number of moves a spouse had made was significantly associated with working for financial need, with every move decreasing the likelihood that financial need would make a major contribution to their employment decision.

Thus, in evaluating the "working for financial need" hypothesis, there appears to be some support when examining White and Black spouses, although different elements of geographic mobility provide that support. Those spouses who have moved less frequently, as measured by the average time between moves, may have less financial need (i.e., due to the costs of relocating they do not incur relative to those who move more frequently), thus, limiting the necessity that they work for financial need. For enlisted personnel, this hypothesis is not supported at all. In fact, geographic mobility, at least in terms of the number of moves made, appears to be working in the opposite direction. It may be that those enlisted spouses who make more moves, because of the number of moves they have made and the resultant insecurity of employment at their new location, become more reliant on their military member's income to meet financial needs and come to see their own income as

providing "extra" or "spending" money. However, more research is needed to confirm such a suggestion.

The employment opportunities hypothesis was evaluated using two dependent variables: one indicating how problematic finding employment was and a second indicating the level of satisfaction with employment opportunities. The results of the analysis of the difficulty of finding employment were generally supportive of this hypothesis. Overall, those spouses who had spent more time overseas felt that finding employment was more problematic, while those who remained at their current location for longer periods of time generally experienced less difficulty. The benefits of being on station longer, though, were stronger for Blacks and officers' spouses than for Whites and the spouses of enlisted members, respectively. The number of moves a spouse has made was also a significant factor associated with the level of difficulty experienced by Black spouses in finding employment, with more moves being associated with a higher level of difficulty. However, there is some evidence that additional years spent overseas for Blacks are actually associated with a decrease in the level of difficulty of finding employment. It may be that Blacks encounter less obstacles to their employment (e.g., discrimination) overseas than they do in the US.

In terms of satisfaction with employment opportunities, results strongly supported this hypothesis. Net of other factors, an increase in the amount of time experienced between relocations and in the amount of time at their present geographic location were each associated with having lower levels of dissatisfaction with employment opportunities. The decrease in dissatisfaction associated with having spent a longer amount of time at their current geographic location was especially

strong for racial minority spouses. Having more time to find employment may make the process of searching for a job less difficult and, having been able to invest such time in a job search that may yield more desirable employment, increase the satisfaction one has with employment opportunities. If minority spouses were to encounter difficulties searching for and finding employment above those encountered by White spouses, it is logical that minority spouses would receive more of a benefit from having additional time to overcome such obstacles. Additionally, spending more time at an overseas location was associated with experiencing higher levels of dissatisfaction for White spouses. Overall, then, a spouse's perceptions about employment opportunities appear to be strongly tied to various aspects of their geographic mobility.

3. What are the consequences of geographic mobility in terms of employment status and type of employment?

Overall, geographic mobility appears to have significant consequences for the employment status of civilian spouses as well as the type of employment they obtain. Initially, I hypothesized that those spouses who were most mobile would be the least likely to be employed (Hypothesis 3.a.i.). The evidence presented in Chapter VII, at least in terms of the frequency with which one moves and the amount of time a spouse has been at his or her present geographic location, is generally supportive of this hypothesis. Every additional year that a spouse experienced between moves increased the likelihood that they were employed by 3.4%. A spouse's time on station had a stronger influence, increasing a spouse's likelihood of employment by 15.4% per year.

Thus, those who were geographically more stable, according to these measures, tended to be more likely to be employed.

However, when the data were disaggregated by the officer/enlisted status of the military member to which the spouse was married, the number of moves a spouse had made while married to their military member had an effect opposite of what I expected for the spouses of enlisted personnel. That is, each move that an enlisted spouse made was associated with an increase of 5.3% in the likelihood of being employed—a factor that was not significant (but in the opposite direction) for the spouses of officers. Thus, my hypothesis that geographic mobility is more costly for those spouses whose military members are more senior in rank than those with more junior spouses in terms of employment status (Hypothesis 3.d.i.) is indirectly supported. I find that, while no geographic mobility variable is more costly for the spouses of officers relative to the spouses of enlisted personnel in terms of employment status, the spouses of enlisted personnel appear to receive a premium not received by officers' spouses from the number of moves they have made. It may be that those enlisted spouses who have made more moves have found jobs that are more transferable from location to location or have become more skilled at finding employment with each move. Unfortunately, though, no information as to the specific nature of their employment is available in these data. It also may be that the financial costs associated with these moves drive more enlisted members into the labor force out of financial necessity.

Other differences in the influence of geographic mobility on whether or not a spouse is employed emerge when the data are disaggregated by race. First, the

positive association of both time on station and the average time experienced between moves with an increased likelihood of being employed is significantly greater for racial minority groups than for White spouses. Every year that White spouses are at their current geographic location is associated with a 12.2% increase in the likelihood that they are employed. For Black spouses, the corresponding increase per year of being on station is 56.5%. For Asian spouses, the value of the time experienced between moves is significantly greater than that of White spouses with each year increasing the likelihood of employment 23.7%. The corresponding increase for White spouses was only 4.4%. Both of these findings support the hypothesis that geographic mobility is more costly for racial minorities than for non-minorities in terms of employment status (Hypothesis 3.c.i.). While not being hindered more by higher levels of geographic mobility, these results indicate that racial minorities may benefit more from lower levels of geographic mobility than White spouses. If minority members experience obstacles in the employment process that White spouses do not, it seems logical that increased geographic stability would allow them more time to overcome those obstacles and, thus, be more beneficial for them.

There is, however, evidence that the time experienced between moves does not work for Black spouses as anticipated by this hypothesis. While White and Asian spouses who have experienced longer periods of time between moves are more likely to be employed than similar spouses who have moved more frequently, the reverse is true for Black spouses—each additional year of time between moves is associated with a 12.2% decrease in the likelihood of employment for Black spouses. This result is in stark contrast to and is largely offset by the relatively substantial increase in the

likelihood of employment associated with each year that Black spouses have been at their current location. One possible explanation for this result is that those Black spouses who have moved more frequently (i.e., experienced less time between moves), may be more adept at gaining employment or have chosen jobs that are more transportable or become more adept at finding employment than those Black spouses who have not moved as frequently. Additional research is certainly needed to explore the transportability of specific jobs, but this data set does not allow for such analysis.

Unlike the differences that emerged when the data were disaggregated by class and race, no differences as to how geographic mobility was related to whether or not a spouse was employed emerged between civilian husbands and civilian wives. This lack of differences is not supportive of the hypothesis that geographic mobility is more costly for civilian husbands than civilian wives in terms of employment status (Hypothesis 3.b.i.). Thus, while civilian husbands were more likely to be employed than civilian wives, the geographic mobility required of them as spouses of military members did not differentially affect the likelihood that they would be employed.

Another dimension of geographic mobility, the number of years spent overseas, had an overall effect opposite of what one might expect—the number of years spent overseas was positively associated with an increased likelihood of employment. This may be related to the type of jobs overseas returnees are applying for and are accepted at. More specifically, the number of years spent overseas is also significantly associated with whether or not an employed spouse is in a Federal job. Every year a spouse lives overseas is linked to a 6.4% increase in the likelihood of being in such a job.

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Those spouses who are stationed overseas may be more likely to seek Federal employment while overseas rather than seek employment in a foreign economy (even those spouses who prefer civilian employment). Spouses who obtain Federal employment can then become eligible for certain Federal employment programs that would give them priority in the hiring process over other civilian spouses if they chose to seek Federal employment upon returning to a stateside location. For example, those spouses who are Federal employees who complete an overseas tour of duty (i.e., their own tour of duty, not their military spouses') are given a higher priority in the DoD civilian hiring process than other spouses of military members (DoD 2003). If overseas assignments encourage Federal employment, employment in general may be encouraged. That is, upon returning from overseas, spouses who have been employed by the Federal government may be more likely to be employed, especially in Federal jobs. While no information is available as to the employment status of spouses while they lived overseas, such a theory is given some support by the fact that when the analysis of the employment variable was redone excluding those who were employed in Federal jobs, the effect of being stationed overseas on employment became nonsignificant. One must also keep in mind, though, that the variable used to measure the number of years that a spouse has lived overseas does not indicate whether those years were in the past or whether they are currently being experienced. However, regardless of whether or not the spouse is currently overseas, given the scenario suggested above, one would still expect Federal employment to be higher amongst those who have or are currently serving overseas.

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Looking more closely at the spouses who were employed, I also hypothesized that spouses who have higher levels of geographic mobility would be less likely to be employed full-time (Hypothesis 3.a.ii.) and less likely to be employed in a Federal job (Hypothesis 3.a.iii.) than spouses with lower levels of mobility. While the hypothesis regarding full-time employment received strong support from the analysis in the chapter, the Federal employment hypothesis did not. The most significant mobility factor related to full-time employment was how long a spouse had been at his or her current assignment. For every year that a spouse had been at his or her current location, the likelihood that he or she was employed full-time increased by 6.1%. Thus, a higher level of current geographic stability was associated with an increased likelihood of full-time employment. Other than the significant relationship between the number of years spent overseas and Federal employment (discussed above), no other geographic mobility was associated with being in a Federal job.

More detailed analysis of those who were not employed showed that geographic mobility also had a relationship with whether such a spouse was classified as unemployed or not in the labor force. Two main geographic mobility factors had a significant relationship with this dependent variable: the number of moves a spouse had made over the course of his/her marriage to a military member and the amount of time that he/she had been living at their current location. An increase in either of these was associated with a decrease in the likelihood of being unemployed and, thus an increase in the likelihood of being out of the labor force. It appears then that the more moves that a spouse has made and the longer the spouse who is not employed has been at their current location, the more likely they are not to be in the labor force. One

possible explanation that is suggested by this analysis is that those spouses not working who have been on base longer may eventually give up looking for work and drop out of the labor force. It may also be that as spouses approach the end of their tour at a given location, they voluntarily quit their jobs in anticipation of their next move. Another alternative explanation is that given that spouses are more likely to become employed the longer they are at a given assignment; unemployed spouses may eventually find work, leaving a disproportionate number of those voluntarily out of the labor force (e.g., housewives) in the subgroup of those not employed who have been at the same location for a long period of time. However, all of these explanations require further research.

Some of those not in the labor force, however, would work or at least search for work if they felt that there were appropriate jobs available for which they would qualify. As discussed earlier, these are known as discouraged workers. My hypothesis was that civilian spouses who move more often are more likely to be discouraged workers than those who move less frequently (Hypothesis 3.a.iv.). This hypothesis was generally not supported, as the only geographic mobility variable that was significantly associated with being a discouraged worker was the number of years stationed overseas. For every year that a spouse had been at an overseas location, the likelihood of a spouse who is not in the labor force being a discouraged worker increased by 5.8%. This finding may be due to the fact that those currently serving overseas, with potentially limited options in foreign labor markets (i.e., possibly feeling that appropriate jobs for which they would qualify are not available), are included among those who have spent time overseas at a previous assignment. If

those currently overseas are more likely to be discouraged workers, a significant effect of being overseas might emerge that differs from how years spent overseas in the past might affect whether or not a spouse is a discouraged worker. Unfortunately, there is no way to separate those whose years of living overseas are in the past from those who are currently living overseas using this data set.

4. What are the economic consequences of geographic mobility in terms of earnings?

The results of the analysis presented in Chapter VIII generally support the hypothesis that higher levels of geographic mobility are associated with earnings penalties for civilian spouses (Hypothesis 4.a.i.). I found that, net of other factors, each move that a spouse has made over his or her marriage to a military member is associated with a loss of 2% of their annual earnings. Additionally, every year that a spouse's average time between moves increases is associated with an increase in earnings of 1.3%. The relationship between time between moves and earnings, though, was only significant for Asian spouses, whose earnings increase 14.7% per year increase in their average time between moves, when the data were disaggregated by race. When the analysis was limited to year-round employees, the influence of the number of moves a spouse has made lost its significance. This may imply that one potential avenue as to how the number of moves a spouse has made affects his or her earnings is by limiting a spouse's ability to work year-round.

Geographic mobility had a similar influence on the earnings of civilian husbands and civilian wives as well as on the spouses of officers and the spouses of enlisted personnel, failing to support the hypotheses that geographic mobility is more

costly for civilian husbands than civilian wives (Hypothesis 4.b.i.) and for the spouses

of more senior than junior military members (Hypothesis 4.d.i.). However, racial

differences in the influence of geographic mobility on earnings were significant. As

noted above, Asian spouses received a significant gain from having a longer average

time between moves—a gain that was not experienced by other racial groups. This is

somewhat indirect evidence supporting the hypothesis that geographic mobility would

be more harmful to minority than White spouses (Hypothesis 4.c.i.). While Asian

spouses did not receive more of a detriment from increased mobility, they did receive

more of a benefit from this measure of geographic stability. However, the race-

earnings hypothesis is called into question by another finding: instead of receiving

more of a penalty than White spouses for the number of moves a spouse has made,

Asian spouses actually appear to receive a significant benefit. That is, every move an

Asian spouse made was associated with an earnings increase of 15.4%. Asian spouses

may become more skilled at finding better-paid employment with each move they

make.

5. Does geographic mobility have implications for the degree to which the jobs of the
   civilian and military spouses interfere with one another?

   It was hypothesized that those who experience higher levels of geographic

mobility would also experience higher levels of interference than those civilian

spouses who are less mobile (5.a.1.), likely due to more frequent interruptions in

employment. However, it could just as easily be hypothesized that those who are

more mobile experience less interference as a result of choosing jobs whose demands

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are more flexible to allow for a higher level of accommodation to the demands of being a spouse of a military member. There appears to be some evidence supporting each of these depending upon how the data are disaggregated. Supportive of my initial hypothesis is the overall finding that each move that a spouse has made is associated with a 5.9% increase in the likelihood that a civilian spouse experienced some interference versus no interference at all. For Asian spouses, though, the influence of the number of moves was not significant in comparing the "some interference" category with the "no interference "category. It was significant, however, when comparing the "most interference" category to the "no interference" category. Every move that an Asian spouse made was associated with a 37.9% decrease in the likelihood of being in the "most interference" category. The alternative hypothesis suggested above may provide a better explanation of how the number of moves a spouse has made affects the level of interference experienced by Asian spouses.

Other findings were also not supportive of my original hypothesis. For example, an increase in the average time between moves—indicating less geographic mobility—was associated with a significant increase in the likelihood that spouses would experience some interference rather than no interference at all. The increase was 4.1% per year of increase in the average time between moves. Staying longer, on average, at each location may lead to an increase in interference because such spouses may be more likely to "settle in" at each assignment and find more permanent or enduring employment and, thus, experience more interference when the time to move does arrive. Indeed, other analysis in this dissertation demonstrated that the average

time a spouse experiences between moves has a significant positive relationship with the length of time they had been employed by their current employer and the likelihood they would be employed full-time. Also not supportive of my original hypothesis and supportive of the suggested alternative is the finding that those spouses, especially White spouses, who had lived overseas longer were less likely to experience some interference versus no interference at all. It may be that White spouses who have lived overseas choose jobs which are more flexible than spouses who have not lived overseas.

Some support for my original hypothesis, though, can be found in the analysis of Black spouses. For them, those who had been at their current location for a longer period of time were less likely to fall into the "some interference" category relative to the "no interference" category. The effect of this variable was not significant, though, for White spouses, with whom Black spouses differed significantly. One possible explanation for this race difference in the influence of geographic mobility is that Black spouses may develop strategies for limiting or eliminating job interference as time passes at their current location that White spouses do not learn.

Summarizing the Impact of Geographic Mobility

This study is unique in that geographic mobility is not viewed uni-dimensionally. One's geographic mobility history, as measured by the number of moves one has made, the frequency with which one has moved, and the number of years spent overseas may all come to bear on one's employment situation. In addition to one's mobility history, an individual's present level of geographic mobility, or

geographic stability, as measured by how long one has lived at a given location, is also important. Each of these dimensions appears to make a unique contribution to the employment situation of civilian spouses of military members. Thus, in this section, I summarize the results of my analysis in a slightly different format than I have done previously—by each of these dimensions. Summarizing the results in this manner emphasizes the importance of going beyond the view of geographic mobility as simply whether or not an individual has made a move. Additionally, such a summary provides an answer to the two primary questions asked in this study: "How does geographic mobility affect the employment situation of civilian spouses of military personnel?" and "Under what conditions and in what ways does the impact of geographic mobility differ by the gender, race, and class of the spouse?"

The number of moves that a civilian spouse has made due to the permanent reassignment of the military member to which he or she is married is one measure of the frequency with which a spouse has moved over the course of their "career" as a military spouse. Each relocation is significantly related to a change in the employment situation of these spouses. Some of these relationships are negative, while others are positive. On the negative side, Black spouses who have moved a greater number of times have increased difficulty in finding employment at their current geographic location. Each move is also associated with a 2% loss in annual earnings for employed spouses in general and an increased likelihood that such spouses, especially White spouses, would experience some interference between their job and the job of their military member versus experiencing no interference at all.

For some groups, however, the number of moves a spouse has made is associated with more positive outcomes. For example, spouses not employed who made more moves are decreasingly likely to be unemployed versus out of the labor force. This effect is even greater for Black spouses than White spouses. A decrease in unemployment is considered positive because such a decline indicates a decrease in the percentage of spouses not employed who want to work, but cannot find a job. For Asian spouses, an increased number of moves was associated with both an increase in earnings and a decrease in the likelihood of experiencing the highest levels of interference between the civilian spouse's and the military member's jobs.

One finding associated with the number of moves a spouse has made that may or may not be positive is that each move is associated with an increased likelihood of being employed for the spouses of enlisted members. This is a positive finding if this result is indicative of spouses, who would like to work, becoming more skilled at finding jobs with each move they make. On the other hand, if this finding is better explained by the suggestion that enlisted spouses who make more moves incur more of a financial burden for their geographic mobility and are, thus, driven into the labor market out of financial necessity, despite their own desires about employment, one might conclude that this is a relatively negative effect. As with any of these results, though, one must keep in mind that just because there is an association between the number of moves a spouse has made and any of these outcomes, does not mean that there is a cause-and-effect relationship.

The number of moves a spouse has made over the course of his or her marriage to a military member does not provide a complete picture of the geographic mobility

these spouses experience over time. One must also consider the spacing of these moves. In other words, the geographic mobility of a spouse who has made three moves in six years is much different than a spouse who has made three moves over a twelve year period. To capture this element of geographic mobility, I created a variable which indicated the average time a spouse experiences between moves. Thus, an increase in this variable can be thought of as a decrease in geographic mobility or an increase in geographic stability.

The results of my analysis show that this aspect of geographic mobility is also significantly related to the various employment outcomes considered in this study. For example, an increase in the average time between moves is associated with having lower levels of dissatisfaction with employment opportunities, an increase in the likelihood of being employed (an effect which is especially strong for Asian spouses, but reversed for Blacks), an increase in the length of time a spouse has been employed by his or her current employer, and an increase in annual earnings (although this was mostly experienced by Asian spouses). Additionally, each year increase in the average time between moves was also associated with an increased likelihood of having experienced some interference between the civilian spouse's job and that of his or her military member.

Geographic mobility in the military, though, is not simply a matter of how much one has moved in the past. The length of time a spouse has been residing at his or her current location is also an important dimension. As the number of years a spouse has been on station increases, the likelihood of that spouse indicating that finding employment was somewhat of a problem or a serious problem relative to no

problem at all decreased significantly—an effect that was magnified for Blacks relative to Whites and for the spouses of officers relative to the spouses of enlisted personnel. Such an increase was also associated with having lower levels of dissatisfaction with employment opportunities, an effect that, again, was even stronger for racial minorities.

Each year increase in the amount of time a spouse had been at his/her current location was further associated with a significant increase in the likelihood of being employed (an effect that was amplified for Black spouses) and, for those who were employed, an increase in the length of time they had been employed with their current employer and an increase in the likelihood of being employed full-time. Furthermore, such an increase was associated with a significant decrease in the likelihood that employed Black spouses would fall into the "some interference" category versus the "no interference" category, a factor that was not significant for White spouses. It was also found that the longer spouses not employed were at their present location, the more likely they were to be not in the labor force, rather than unemployed, but this effect appeared to be mostly driven by the influence of this variable on Black spouses, as it was not a significant factor for White spouses.

Geographic mobility in the military is also more than simply a matter of the number and timing of moves addressed by the previous three mobility dimensions. The characteristics of the locations which these spouses have resided previously as well as where they live now are also likely to influence their employment situation. While no information is available in these data as to the current or past locations of these spouses, information is provided as to how many years a spouse has lived

overseas. One would expect that those who have spent a greater amount of time overseas would experience some employment consequences.

However, as noted above in the evaluation of my hypotheses, the influence of the number of years living overseas is not consistent across subgroups and does not always work in the manner one would expect. For example, an increase in the number of years lived overseas increased the likelihood of indicating finding employment somewhat of a problem or a serious problem for White spouses, but decreased the likelihood for Black spouses. Similarly, an increase in the years spent overseas was associated with an increased likelihood of being more dissatisfied with employment opportunities for White spouses, but not racial minority groups. Overall, additional years spent overseas were also associated with an increased likelihood of being employed at the spouses' current location and, if employed, an increased likelihood of being employed by the Federal government and a decrease in the length of time a spouse has been with their current employer. Also with regards to employed spouses, each year spent overseas by White spouses was associated with a decrease in the likelihood of experiencing some interference between their own job and the job of their military member versus experiencing no interference at all. However, this variable was not significant for Black spouses, who differed significantly from White spouses in this respect. For those not currently in the labor force, an increase in the number of years spent overseas tended to increase the overall likelihood that a spouse was classified as a discouraged worker.

Policy Implications

In order to recommend specific policy changes, one must make some assumptions about the direction of causality with regards to geographic mobility and the employment situation of military spouses. That is, one must assume that changes in one or more dimensions of a spouse's geographic mobility would have an effect on the employment situation of that spouse. Not being a longitudinal study, causality cannot be determined by the research presented here. It could be that a spouse's employment situation has some influence on his or her geographic mobility. Spouses who are in relatively favorable occupations at their current location may encourage their military members to limit their geographic mobility by not volunteering for certain military assignments or by volunteering for other assignments that would keep the military member and their spouses within the same geographic location (e.g., requesting an reassignment from Randolph Air Force Base to Lackland Air Force Base, both of which are located in San Antonio, Texas). Other spouses not as concerned about their own employment may encourage their military members to apply for a broader array of assignments, including those overseas, and to move more frequently.

While these scenarios are real possibilities, a soldier does not necessarily have the capability of limiting his/her geographic mobility and many of the moves made in the military are not voluntary in nature. It seems more likely that the direction of causality goes both ways such that while spouses in more favorable employment situations may be able to limit their geographic mobility to some extent, that spouse's level of geographic mobility also sets limits on his or her employment. Thus, one

must accept that a policy affecting the geographic mobility of civilian spouses may not have the full, desired effects.

In considering certain policy changes, one must also consider what the goal of such a change would be. I would argue that encouraging the employment of civilian spouses is not an appropriate goal. If this were the goal, one could simply cut military pay and benefits until it became a necessity that the civilian spouse of married military members work for pay. A more appropriate goal of such a policy would be to encourage a pattern of geographic mobility that minimizes the employment penalties experienced by civilian spouses that are associated not only with a spouse's current move or location, but the history of moves he or she has made over the years. Keeping in mind that geographic mobility affects different groups in different ways, it would appear to be especially advantageous to civilian spouses who desire employment if they were to remain at their current assignment for an extended period of time. Over time, such a policy would decrease the number of moves which these spouses made and increase the average time they experience between moves.

If, over time, such a policy increased the average time spouses experienced between moves as well as the amount of time that spouses had been at their current location by one year, while decreasing by one the number of moves, on average, these spouses have made, the regression models in the previous chapters indicate that, if all other factors were held constant, we would see changes in spousal dissatisfaction with employment opportunities, the likelihood of employment, and spousal earnings listed in Table 10.1 (assuming a causal relationship). These percentage changes were calculated by adding the coefficients of the time on station variable (if present) and the

average number of years between moves variable and then subtracting the coefficient for the number of moves variable. Only coefficients that were significant at the 0.05 level were added or subtracted. The results of this operation were then exponentiated. One was then subtracted from this answer and the final percentages were calculated by multiplying this result by 100.

Table 10.1: Potential Impact of Decreasing Geographic Mobility[*] on the Employment Situation of Civilian Spouses

Group/Sub-Group	Dissatisfaction with Employment Opportunities	Employment	Earnings
Men	-12.4%	+30.0%	Not Significant
Women	-8.7%	+20.0%	+3.3%
White	-6.9%	+17.7%	+2.4%
Black	-15.1%	+39.5%	Not Significant
Asian	-15.6%	+37.4%	-0.6%
Spouse of Enlisted	-9.8%	+14.3%	Not Significant
Spouse of Officer	-7.5%	+19.3%	+1.6%
Total	-9.6%	+19.4%	+3.4%

If a causal relationship does exist between geographic mobility and these three dependent variables, the results listed in Table 10.1 indicate that such a policy would dramatically decrease the likelihood that spouses would feel "dissatisfied" or "very dissatisfied" with their employment/job opportunities and would increase employment

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[*] Average time between moves and time on station increased by one year, number of moves decreased by one, all other variables held constant.

overall by 19.4%. The effects of a reduction of geographic mobility on levels of dissatisfaction with employment opportunities and on employment itself would be greatest for men and minority members. However, such a reduction in geographic mobility may have little impact on the earnings of spouses who do work for pay. In order to improve the earnings levels of civilian spouses, it may be that policies targeting spousal education and other non-specific human capital would be more effective. However, increasing the education of civilian spouses beyond the high school diploma level may have certain negative consequences for civilian spouses: increased difficulty finding (appropriate) employment, increased dissatisfaction with employment opportunities, and increased interference between the job of the civilian spouse and the job of the military member. Furthermore, the finding that such changes in geographic mobility would have little influence on earnings may be indicative of the types of jobs available to spouses surrounding military installations and conditions in the local labor markets (see Booth, et al. 2000). Further research is needed to evaluate such suggestions.

Supporting the employment of the civilian spouses of its military personnel can potentially impact the military by influencing the retention decisions (i.e., whether or not they remain in the military) of its married soldiers. According to Orthner (1990: 3), "One of the most consistent findings in the research is the positive relationship between spouse support and the retention intentions and behavior of armed forces personnel." In particular, a spouse's employment situation may influence that spouse's satisfaction with the military way of life and influence the spouse's support of the military member remaining in the military (Orthner 1990). But the link between

spouse employment and retention is not straightforward. Some have concluded that "it is not spouse employment, per se, which reduces support for retention. The critical issue seems to be the extent to which the wife's employment meets her personal and family expectations and needs" (Scarville 1990: 34). Thus, the degree to which spouses are unemployed, underemployed, or discouraged workers may have especially significant impacts on spousal support. In this analysis, the variables in the policy suggested above had no significant relationship with whether or not a spouse was classified as a discouraged worker. However, such a policy would decrease (again, assuming a causal relationship), the likelihood that a spouse was unemployed versus not in the labor force by 5.6%. Thus, one would expect that geographic mobility may, at least indirectly, influence overall spousal support for the retention of the military member.

Like most of the research on the spouses of military personnel, much more has been written about the spousal support for retention of civilian wives of military men than civilian husbands of military women. We do know, however, that spousal support is a better predictor of retention for military men than for military women (Orthner 1990). This is probably a positive for the military in terms of retaining women soldiers, as civilian husbands tend to be less supportive of their military wives' careers, more likely to want them to leave the military after their current obligation, and more likely want their wives to accept an option to leave the military before their obligation is fulfilled, when compared to the civilian wives of military men (Stander et al. 1998).

Geographic mobility may affect retention in ways other than through the employment situation of spouses. According to the GAO (2001b), the average length of a tour of duty over a soldier's career is related to satisfaction with the military and intentions to stay in the military. Those with shorter average tour lengths (especially those with an average tour length of less than two years) are less satisfied with the frequency with which they have had to relocate, less satisfied with the military way of life, less likely to say that they would choose to remain in the military, more likely to say that they would leave the military before retirement, and more likely to say that their spouse or boyfriend/girlfriend wants them to leave the military. While these statistics do not control for rank or duration of service, they certainly are of some concern for the military.

Conclusions and Suggestions for Future Research

The importance of this study stretches beyond the military implications outlined above. One should note that while these civilian spouses experience some unique familial demands due to the military service of their marital partner, these are, nevertheless, civilian spouses in, for the most part, civilian labor markets. Thus, the influence of geographic mobility on employment may generalize to other civilians in the labor market. Indeed, if one looks at the gender and race differences found in this study, they often reflect trends found in broader society. Undeniably, this results from the fact that the military in the United States is a reflection of broader society. In many ways, the military can be seen as a natural laboratory—a microcosm of U.S. society in which sociologically important concepts continue to be played out and can

be studied under a relatively controlled set of circumstances. In this laboratory, I have expanded the conceptualization of geographic mobility as well as confirmed and expanded what is known about how gender and race operate and intersect to influence the employment opportunities and outcomes for men, women, Blacks, Whites, and Asians. Furthermore, because the military is one of the few employers that regularly relocates its working class (in addition to those of higher class), I was able to examine class differences in employment-related outcomes and in the influence of geographic mobility on these outcomes—a task that would be extremely difficult in any other context.

While this study provides a number of answers to the question of how geographic mobility affects the employment situation of civilian spouses of military members, there are many other questions, in both the military and civilian sectors that need to be considered in future research. First, future research needs to address the impact for spouses of military personnel of being born overseas to non-military parents. Although such a status is included as a control variable in this study, more research is needed to determine exactly how being born overseas relates to a spouse's employment situation over the course of his or her "career" as a military spouse. In some sense, being born overseas can be thought of as yet another aspect of geographic mobility that is especially significant for Asian spouses. Second, additional data need to be collected to address how geographic mobility influences the specific types of jobs (e.g., service, management, etc.) that these civilian spouses take and the strategies they use to find such jobs. A measure of underemployment would be especially helpful in determining the influence of geographic mobility. Even if a decrease in

geographic mobility was related to an increase in civilian spouse employment, if the only options for employment were jobs for which these spouses were overqualified (and probably underpaid), the utility of such an increase in spousal employment would appear to be diminished.

A third question which future studies should address is how geographic mobility affects the employment of racial/ethnic minorities not included in this study, especially those of Hispanic origin. Data need to be collected that oversamples such minorities to allow for a detailed statistical analysis such as that conducted in this study for other groups. Those who do study spouses of Hispanic ethnicity should pay particular attention to the specific Hispanic ethnicity/country of origin (i.e., Cuban, Mexican, Puerto Rican, etc.), as my preliminary analysis demonstrated that there is significant variability among Hispanics along those lines. Indeed, in some cases, specific Hispanic ethnicity was more important than race in explaining the variation in the employment situation of civilian spouses.

Fourth, to address the direction of causality between employment and geographic mobility better, longitudinal research needs to be conducted. More specifically, what is needed is a longitudinal study of military spouses that contains both pre- and post-move employment and earnings information. Furthermore, such studies should track civilian spouses of military members after their spouses leave the military. As the sample captured by any survey of the military is, at least to some degree, biased by the attrition of those who left the military, especially at the more senior ranks, such information would be important in determining to what extent the geographic mobility and the employment situation of civilian spouses contributed to

personnel losses for the military and in exploring how geographic mobility experienced as the spouse of a military member is related to the employment situation of those spouses when their military member is no longer in the military.

There are two final considerations for which future research should also account. First is the understanding that not all civilian spouses of military personnel—or others, for that matter—are equal in terms of their employment situation. Gender, race, and class are just three of the dimensions along which spouses vary. Not only are gender, race, and class associated with specific employment-related outcomes, they are intricately linked to how geographic mobility affects these outcomes. Referring back to the human capital model implicit in the tied migration framework, it appears that there is much more going on in the employment situation of tied migrants than a cost/benefit analysis or a simple exchange of human capital for employment and earnings. An individual's gender, race, and class greatly influence not only the calculations of any costs or benefits, but the ability of individuals to convert their human capital into employment and earnings. Lastly, for both those who study geographic relocation in the military and those who study it in the civilian sector, especially in those occupations or sectors that require repeat migration, geographic mobility cannot be considered as a single dimension. That is, whether or not an individual has moved, the most frequent measure of geographic mobility encountered in the literature, may not be as important as how many times they have moved, how frequently they have moved, how long they have been at their current location, and the number of years they have spent living outside the U.S.

APPENDIX A: QUESTIONS FROM THE 1992 DOD SURVEY OF MILITARY SPOUSES

2. As of today, how many months have you been living at your present geographic location?

     Possible Responses: 0 – 999

8. During your marriage, how many times has your spouse moved because of his/her permanent change of station (PCS)?

     Possible Responses: 0 – 9; 10 or more

9. During your marriage, how many times did you move because of your spouse's permanent change of station (PCS)?

     Possible Responses: 0 – 9; 10 or more

10. How many total years have you spent at the same overseas location with your spouse?

     Possible Responses: Not applicable, spouse has never had an overseas assignment; Never at an overseas location at the same time; Less than 1 year; 0 – 49

11. Think about your present geographic location, post, or base. How much of a problem was each of the following? Finding civilian employment

     Possible Responses: Not applicable, have not made a PCS move; Serious Problem; Somewhat of a Problem; A Slight Problem; Not a Problem; Not Applicable; Don't Know

13. Have you ever served in the U.S. Armed Forces, either on active duty or in the
    Reserves?

    Possible Responses: No; Yes, separated from Army; Yes, separated from
        Navy; Yes, separate from Marine Corps; Yes, separated from Air Force;
        Yes, separated from a Reserve/Guard Component; Yes, currently on active
        duty in Army; Yes, currently on active duty in Navy; Yes, currently on
        active duty in Marine Corps; Yes, currently on active duty in Air Force;
        Yes, currently in a Reserve/Guard Component; Yes, currently retired from
        military duty

37. For each family program or service listed below, please mark whether you have
    ever used it at your present location …Spouse Employment Services

    Possible Responses: Yes; No

46. Are you:

    Possible Responses: Male; Female

47. How old were you on your last birthday?

    Possible Responses: 0 – 69

48. Where were you born?

    Possible Responses: In the United States; Outside the United States to military
        parents; Outside the United States to nonmilitary parents

50. Are you:

    Possible Responses: American Indian/Alaskan Native; Black/Negro/African
        American; Oriental/Asian/Chinese/Japanese/Korean/Filipino/Pacific
        Islander; White/Caucasian; Other

51. Are you of Spanish/Hispanic origin or descent?

> Possible Responses: No (not Spanish/Hispanic); Yes, Mexican/Mexican-
> American/Chicano; Yes, Puerto Rican; Yes, Cuban; Yes, Central or South
> American; Yes, other Spanish/Hispanic

52. As of today, what is the highest school grade or academic degree that you have?
Do not include degrees from technical/trade or vocational schools

> Possible Responses: Less than 12 years of school (no diploma); GED or other
> high school equivalency certificate; High school diploma; Some college,
> but did not graduate; 2-year college degree; 4-year college degree
> (BA/BS); Some graduate school; Master's degree (MA/MS); Doctoral
> degree (PhD/MD/LLB); Other degree not listed above

53. Are you currently:

> Possible Responses: Married for the first time; Remarried, was divorced;
> Remarried, was widowed; Separated; Widowed; Divorced

55. How long have you been married to your current spouse?

> Possible Responses: Less than a year; 0 – 69

58. How many dependents in Question 57 [defined in Question 57 as anyone related
to you by blood, marriage, or adoption, and who depends on you for over half their
support] do you have in each of the following age groups who currently live with
you at your permanent post, base, or duty station? Do not include yourself or your
spouse.

> Possible Responses: None; 1 – 4; 5 or more

Categories: Under 1 year; 1 year to 2 years; 2 – 5 years; 6 – 13 years; 14 – 22 years; 23 – 64 years; 65 years or over

65. Are you currently: Mark all that apply.

Possible Responses: Full-time in the Armed Forces; In Reserve or National Guard; Working full-time in Federal civilian job; Working full-time in other civilian job; Working part-time in Federal civilian job; Working part-time in other civilian job; Self-employed in own business; With a job but not at work because of temporary illness, vacation, strike, etc.; Unpaid worker (volunteer or in family business); Unemployed, laid off, or looking for work; Not looking for work but would like to work; In school; Retired; A Homemaker; Other

66. How long have you been working for your present employer or been self-employed?

Possible Responses: Does not apply, I am not employed; 0 – 99 months

67. To what extent does your current paid job(s) interfere with your spouse's military job?

Possible Responses: Completely; A great deal; Somewhat; Very little; Not at all

68. To what extent does your spouse's military job interfere with your current paid job(s)?

Possible Responses: Completely; A great deal; Somewhat; Very little; Not at all

70. How much did each of the following contribute to your decision to work? Need the money for basic family expenses

> Possible Responses: Major Contribution; Moderate Contribution; Minor Contribution; No Contribution

72. Have you ever encountered any of the following problems in looking for a job at your current location?

> Possible Responses: Does not apply, I have never looked for a paid job at my current location; Yes; No; Does Not Apply

> Problems: Lack of jobs that use my training, experience, or skills; Lack of transportation to get to available jobs; Child care not available; Quality of child care not acceptable; Child care too expensive; Child care hours not convenient; My spouse not wanting me to work; Employers not looking to hire military spouses; Military leadership not supporting spouse employment; No jobs available in acceptable salary range; Lack of necessary skills, training, or experience; Too many family responsibilities; Available jobs too far away; Too difficult to work because of my spouse's work demands

73. In 1991, how many weeks did you work for pay, either full- or part-time, at a civilian job, not counting work around the house?

> Possible Responses: None; 0 - 69

74. Altogether in 1991, what was the total amount, before taxes and other deductions, that you earned from a civilian job or your own business?

> Possible Responses: None; 0 – 99,999; 100,000 or more

79. All things considered, please indicate your level of satisfaction or dissatisfaction as a spouse with each feature of military life listed below. Availability of job opportunities/employment for civilian spouses

Possible Responses: Very Satisfied; Satisfied; Neither Satisfied nor Dissatisfied; Dissatisfied; Very Dissatisfied; No Opinion/Experience

APPENDIX B: CHAPTER VI MULTINOMIAL REGRESSION TABLES

Table B.1: Multinomial Logistic Regression – Working for Financial Need (Geographic Mobility)

X	No Contribution				Minor Contribution				Moderate Contribution			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	3.077	0.152	***		2.035	0.101	***		1.484	0.084	***	
Moves	-0.180	0.026	***	0.836	-0.145	0.018	***	0.865	-0.095	0.016	***	0.909
Time Between Moves	-0.045	0.027			-0.052	0.019	*	0.949	-0.045	0.015	**	0.956
Years Overseas	0.042	0.023			0.025	0.015			0.019	0.013		
Time on Station	-0.014	0.017			0.014	0.017			-0.007	0.011		
N	6113											
-2 Log Likelihood Fitted Model	12043.983 ***											

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Major Contribution

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table B.2: Multinomial Logistic Regression – Working for Financial Need (Full Model)

X	No Contribution				Minor Contribution				Moderate Contribution			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	1.326	0.657	*		0.217	0.446			1.066	0.370	**	2.905
Moves	0.063	0.042			0.002	0.030			-0.013	0.025		
Time Between Moves	0.049	0.040			-0.013	0.024			-0.022	0.020		
Years Overseas	-0.001	0.025			0.028	0.018			0.021	0.015		
Time on Station	0.005	0.025			0.016	0.019			0.008	0.014		
Sex	-0.540	0.321			-0.655	0.230	**	0.520	-0.320	0.165		
Black	0.489	0.214	*	1.631	0.345	0.130	**	1.412	0.060	0.098		
Asian	0.968	0.882			0.832	0.552			0.157	0.367		
Born Overseas	-0.210	0.306			-0.130	0.212			-0.330	0.165	*	0.719
Born Overseas*Asian	-0.268	0.995			-1.149	0.615			0.094	0.433		
E1 - E4	3.003	0.336	***	20.136	2.306	0.228	***	10.037	1.411	0.202	***	4.100
E5 - E6	2.585	0.254	***	13.257	1.680	0.176	***	5.364	0.684	0.161	***	1.983
E7 - E9	1.349	0.216	***	3.855	1.439	0.170	***	4.218	0.448	0.154	**	1.565
O1 - O3	0.577	0.228	*	1.780	0.202	0.176			-0.123	0.171		
Children	0.068	0.071			0.025	0.048			0.117	0.040	**	1.124
Child < 6	-0.068	0.164			0.030	0.108			-0.134	0.089		
Remarried	0.549	0.215	*	1.731	0.238	0.137			-0.217	0.104	*	0.805
Age	-0.010	0.015			0.000	0.010			-0.016	0.008		
< High School	-0.958	0.365	**	0.384	0.040	0.243			-0.046	0.196		
Some College	-0.144	0.181			0.409	0.104	***	1.505	0.288	0.084	***	1.334
College Degree	-0.096	0.225			0.655	0.151	***	1.925	0.390	0.127	**	1.476
Graduate School	-0.221	0.238			0.521	0.166	**	1.684	0.337	0.145	*	1.401
Veteran	0.146	0.213			0.362	0.154	*	1.436	0.273	0.120	*	1.314
Reserves	-0.096	0.416			-0.264	0.300			-0.234	0.245		
Navy	-0.148	0.178			0.237	0.118	*	1.267	-0.016	0.096		
Air Force	-0.534	0.158	***	0.586	-0.149	0.105			-0.135	0.090		

Marines	-0.691 0.247 **	0.501	-0.012 0.182	-0.191 0.149
N	5896			
-2 Log Likelihood Fitted Model	10814.158 ***			

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Major Contribution

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table B.3: Multinomial Logistic Regression – Finding Civilian Employment (Geographic Mobility)

X	Not a Problem				Slight Problem				Somewhat of a Problem			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.710	0.074	***		0.822	0.079	***		0.470	0.075	***	
Moves	-0.061	0.015	***	0.941	-0.057	0.016	***	0.945	-0.042	0.015	**	0.958
Time Between Moves	-0.077	0.016	***	0.926	-0.054	0.017	**	0.947	-0.032	0.017		
Years Overseas	0.034	0.012	**	1.035	0.035	0.013	**	1.036	0.050	0.013	***	1.051
Time on Station	-0.089	0.015	***	0.915	-0.072	0.015	***	0.931	-0.054	0.016	***	0.948
N	10147											
-2 Log Likelihood Fitted Model	21941.477 ***											

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Serious Problem

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

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Table B.4: Multinomial Logistic Regression – Finding Civilian Employment (Full Model)

X	Not a Problem				Slight Problem				Somewhat of a Problem			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.496	0.330			0.852	0.359	*		-0.229	0.327		
Moves	0.026	0.022			-0.026	0.024			-0.035	0.022		
Time Between Moves	-0.036	0.019			-0.029	0.021			-0.029	0.020		
Years Overseas	0.033	0.013	*	1.034	0.043	0.015	**	1.044	0.031	0.014	*	1.031
Time on Station	-0.096	0.016	***	0.909	-0.083	0.017	***	0.921	-0.071	0.017	***	0.932
Sex	-0.544	0.146	***	0.581	-0.276	0.160			-0.032	0.135		
Black	0.176	0.084	*	1.192	0.008	0.087			0.269	0.087	**	1.309
Asian	0.389	0.362			-0.232	0.336			-0.217	0.319		
Born Overseas	0.187	0.153			0.093	0.160			0.154	0.158		
Born Overseas*Asian	-0.244	0.417			0.235	0.399			-0.152	0.380		
E1 - E4	0.833	0.172	***	2.300	0.418	0.188	*	1.518	0.424	0.175	*	1.527
E5 - E6	0.664	0.145	***	1.942	0.250	0.160			0.418	0.149	**	1.519
E7 - E9	0.486	0.142	***	1.626	0.364	0.159	*	1.439	0.490	0.150	**	1.632
O1 - O3	0.274	0.152			0.241	0.172			0.223	0.158		
Children	-0.099	0.037	**	0.906	-0.078	0.039	*	0.925	-0.063	0.038		
Child < 6	-0.095	0.078			-0.323	0.084	***	0.724	-0.035	0.080		
Remarried	0.348	0.094	***	1.416	0.505	0.105	***	1.657	0.256	0.096	**	1.291
Age	-0.011	0.008			-0.011	0.008			0.015	0.008	*	1.015
< High School	-0.206	0.172			-0.279	0.177			0.046	0.188		
Some College	0.264	0.074	***	1.301	0.192	0.079	*	1.212	-0.007	0.076		
College Degree	0.651	0.113	***	1.918	0.557	0.122	***	1.745	0.286	0.113	*	1.331
Graduate School	0.770	0.133	***	2.159	0.805	0.149	***	2.236	0.380	0.135	**	1.463
Veteran	0.141	0.100			0.533	0.117	***	1.704	0.054	0.101		
Reserves	-0.624	0.253	*	0.536	-0.501	0.295			-0.596	0.245	*	0.551
Navy	-0.124	0.086			-0.030	0.092			-0.317	0.086	***	0.728
Air Force	-0.254	0.079	**	0.776	-0.058	0.085			-0.190	0.081	*	0.827

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Marines	-0.064 0.131	0.078 0.141	-0.079 0.133
N	7907		
-2 Log Likelihood Fitted Model	20701.444 ***		

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Serious Problem

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table B.5: Multinomial Logistic Regression – Dissatisfaction with Job Opportunities (Geographic Mobility)

X	Very Satisfied				Satisfied				Neither Satisfied nor Dissatisfied				Dissatisfied			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	3.183	0.216	***		0.318	0.079	***		-0.017	0.076			-0.276	0.076	***	
Moves	-0.031	0.048			-0.104	0.016	***	0.901	-0.080	0.016	***	0.923	-0.059	0.016	***	0.942
Time Between Moves	-0.125	0.033	***	0.883	-0.074	0.017	***	0.928	-0.063	0.017	***	0.939	-0.024	0.018		
Years Overseas	0.057	0.037			0.067	0.012	**	1.069	0.065	0.012	***	1.068	0.070	0.012	***	1.073
Time on Station	-0.112	0.024	***	0.894	-0.105	0.017	***	0.901	-0.069	0.017	***	0.934	-0.050	0.018	**	0.951
N	10147															
-2 Log Likelihood Fitted Model	26818.236 ***															

Levels of significance (Wald Chi-Square): * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Very Dissatisfied

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991)

Table B.6: Multinomial Logistic Regression – Dissatisfaction with Job Opportunities (Full Model)

X	Very Satisfied				Satisfied				Neither Satisfied nor Dissatisfied				Dissatisfied			
	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio	b	s.e.	p	Odds Ratio
Intercept	0.734	0.955			-0.248	0.351			-0.179	0.351			-0.734	0.337	*	
Moves	0.110	0.074			-0.048	0.025	*	0.953	-0.038	0.024			-0.034	0.024		
Time Between Moves	-0.069	0.044			-0.042	0.021	*	0.958	-0.037	0.021			0.002	0.021		
Years Overseas	0.044	0.040			0.049	0.014	***	1.050	0.041	0.014	**	1.041	0.061	0.014	***	1.062
Time on Station	-0.132	0.024	***	0.877	-0.105	0.018	***	0.901	-0.081	0.018	***	0.922	-0.052	0.019	**	0.949
Sex	-0.571	0.459			-0.451	0.145	**	0.637	-0.955	0.152	***	0.385	-0.480	0.136	***	0.619
Black	-0.559	0.225	*	0.572	0.361	0.090	***	1.435	0.707	0.091	***	2.027	0.245	0.084	**	1.277
Asian	-1.125	0.599			0.209	0.348			-0.040	0.327			0.313	0.348		
Born Overseas	0.322	0.511			0.339	0.168	*	1.403	0.199	0.159			0.040	0.151		
Born*Asian	2.476	1.180	*	11.891	-0.566	0.414		0.568	0.095	0.393			-0.365	0.406		
E1 - E4	1.943	0.475	***	6.981	0.764	0.187	***	2.148	0.668	0.183	***	1.950	0.605	0.181	***	1.831
E5 - E6	1.916	0.396	***	6.794	0.687	0.158	***	1.987	0.885	0.157	***	2.422	0.582	0.156	***	1.790
E7 - E9	1.687	0.397	***	5.404	0.745	0.155	***	2.105	0.885	0.154	***	2.423	0.546	0.153	***	1.727
O1 - O3	0.986	0.402	*	2.680	0.332	0.166	*	1.394	0.372	0.164	*	1.451	0.323	0.164	*	1.381
Children	-0.279	0.103	**	0.756	-0.167	0.040	***	0.846	-0.219	0.040	***	0.803	-0.116	0.039	**	0.890
Child < 6	-0.084	0.236			-0.100	0.086			-0.442	0.084	***	0.643	-0.214	0.082	**	0.808
Remarried	0.458	0.312			0.256	0.103	*	1.292	0.245	0.101	*	1.277	0.168	0.098		
Age	0.022	0.023			0.005	0.008			0.009	0.008			0.010	0.008		
< High School	-0.860	0.440			-0.094	0.217			-0.629	0.202	**	0.533	-0.304	0.208		
Some College	0.932	0.232	***	2.539	0.347	0.082	***	1.415	0.426	0.080	***	1.530	0.270	0.079	***	1.309
College Degree	1.265	0.345	***	3.542	0.852	0.117	***	2.344	1.069	0.118	***	2.912	0.662	0.112	***	1.939
Graduate School	1.111	0.374	**	3.036	1.011	0.142	***	2.748	0.959	0.139	***	2.609	0.773	0.135	***	2.166
Veteran	0.585	0.347			0.286	0.108	**	1.330	0.135	0.105			0.147	0.101		
Reserves	-0.469	0.718			-0.365	0.249			-0.275	0.252			0.171	0.258		
Navy	0.057	0.271			-0.523	0.095	***	0.593	-0.457	0.091	***	0.633	-0.414	0.090	***	0.661

Air Force	-0.187	0.231		-0.570	0.085 ***	0.565	-0.197	0.084 *	0.821	-0.349	0.082 ***	0.706
Marines	0.498	0.425		-0.119	0.136	0.888	0.203	0.134		0.120	0.130
N	9789										
-2 Log Likelihood											
Fitted Model	25031.626 ***										

Levels of significance (Wald Chi-Square): * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Odds ratios calculated only for those variables significant at the .05 level using Wald test

Reference category: Very Dissatisfied

Note: the significance test for the -2 log likelihood statistics for the fitted model is not calculated in SAS when using the CATMOD procedure for multinomial logistic regression. The test statistic (and its associated probability) were calculated by subtracting the -2 log likelihood score for the fitted model from that of a null model, the result of which is a chi-square value with degrees of freedom equal to the number of coefficients removed from the fitted model to obtain the null model (Allison 1991).

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